



# Full wwPDB X-ray Structure Validation Report ⓘ

May 17, 2020 – 02:09 pm BST

PDB ID : 3NNK  
Title : Biochemical and Structural Characterization of a Ureidoglycine Aminotransferase in the *Klebsiella pneumoniae* Uric Acid Catabolic Pathway  
Authors : French, J.B.; Ealick, S.E.  
Deposited on : 2010-06-23  
Resolution : 2.58 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

---

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.11  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

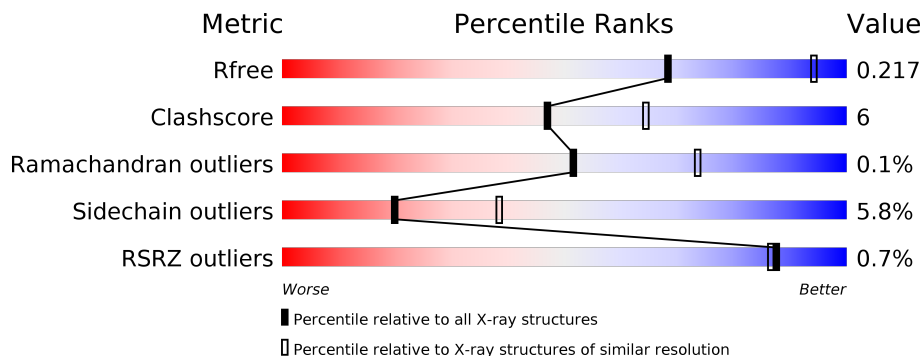
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.58 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	130704	3676 (2.60-2.56)
Clashscore	141614	4049 (2.60-2.56)
Ramachandran outliers	138981	3979 (2.60-2.56)
Sidechain outliers	138945	3979 (2.60-2.56)
RSRZ outliers	127900	3614 (2.60-2.56)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	411	 81% 17%
1	B	411	 79% 19%
1	C	411	 81% 17%
1	D	411	 79% 19%
1	E	411	 80% 19%
1	F	411	 81% 18%

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Length	Quality of chain
1	G	411	<p>79% 19%</p>
1	H	411	<p>82% 16%</p>
1	J	411	<p>82% 17%</p>
1	K	411	<p>86% 13%</p>
1	L	411	<p>82% 15%</p>
1	M	411	<p>80% 19%</p>
1	O	411	<p>84% 15%</p>
1	P	411	<p>81% 19%</p>
1	R	411	<p>80% 19%</p>
1	S	411	<p>81% 17%</p>

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 51634 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Ureidoglycine-glyoxylate aminotransferase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
1	A	411	Total 3158	C 1987	N 558	O 586	P 1	S 26	0	0	0
1	B	410	Total 3175	C 1996	N 567	O 586	P 1	S 25	0	0	0
1	C	410	Total 3164	C 1988	N 565	O 585	P 1	S 25	0	0	0
1	D	410	Total 3180	C 1999	N 567	O 588	P 1	S 25	0	0	0
1	E	410	Total 3147	C 1981	N 557	O 583	P 1	S 25	0	0	0
1	F	410	Total 3171	C 1994	N 566	O 585	P 1	S 25	0	0	0
1	G	410	Total 3164	C 1988	N 565	O 585	P 1	S 25	0	0	0
1	H	410	Total 3183	C 2000	N 567	O 590	P 1	S 25	0	0	0
1	J	410	Total 3154	C 1984	N 558	O 586	P 1	S 25	0	0	0
1	K	410	Total 3175	C 1996	N 567	O 586	P 1	S 25	0	0	0
1	L	409	Total 3156	C 1982	N 564	O 584	P 1	S 25	0	0	0
1	M	410	Total 3183	C 2000	N 567	O 590	P 1	S 25	0	0	0
1	O	410	Total 3154	C 1984	N 558	O 586	P 1	S 25	0	0	0
1	P	410	Total 3175	C 1996	N 567	O 586	P 1	S 25	0	0	0
1	R	410	Total 3164	C 1988	N 565	O 585	P 1	S 25	0	0	0
1	S	410	Total 3179	C 1999	N 567	O 587	P 1	S 25	0	0	0

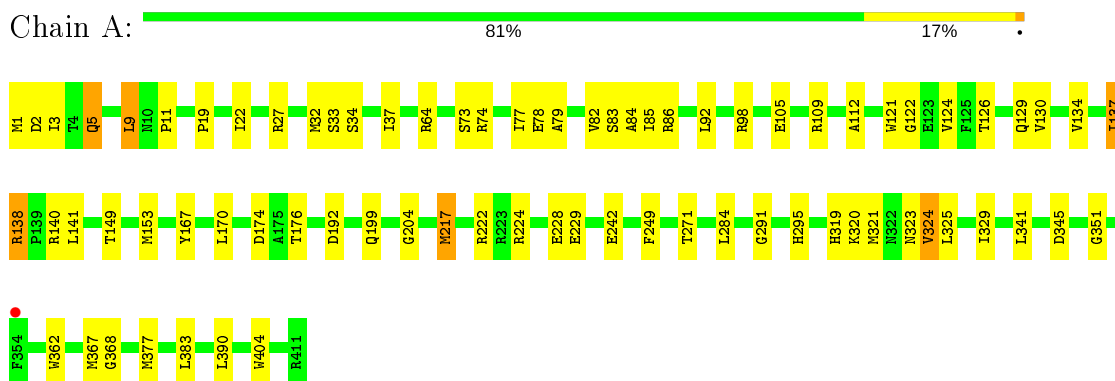
- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	41	Total O 41 41	0	0
2	B	51	Total O 51 51	0	0
2	C	39	Total O 39 39	0	0
2	D	33	Total O 33 33	0	0
2	E	49	Total O 49 49	0	0
2	F	73	Total O 73 73	0	0
2	G	66	Total O 66 66	0	0
2	H	59	Total O 59 59	0	0
2	J	73	Total O 73 73	0	0
2	K	71	Total O 71 71	0	0
2	L	64	Total O 64 64	0	0
2	M	59	Total O 59 59	0	0
2	O	69	Total O 69 69	0	0
2	P	76	Total O 76 76	0	0
2	R	69	Total O 69 69	0	0
2	S	60	Total O 60 60	0	0

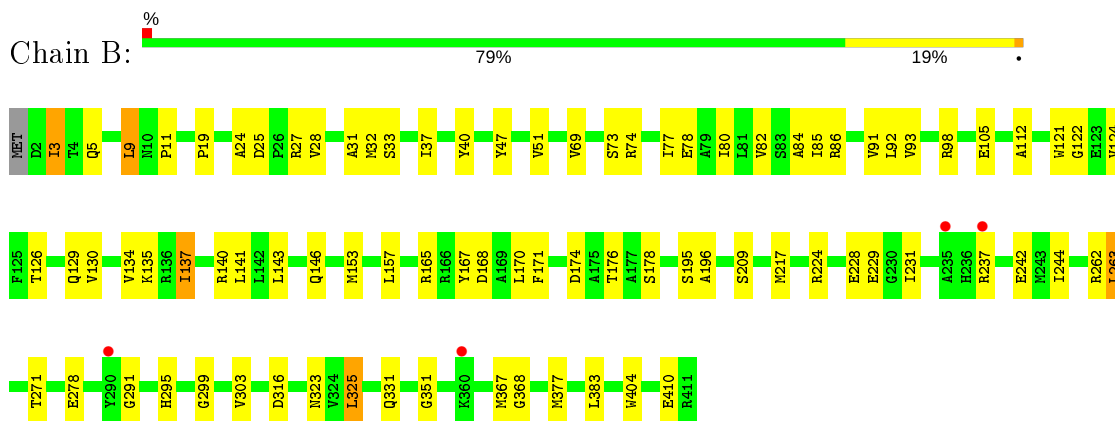
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

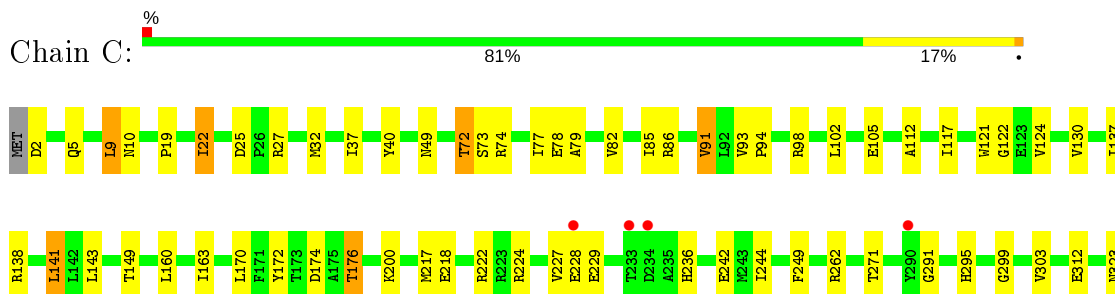
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase





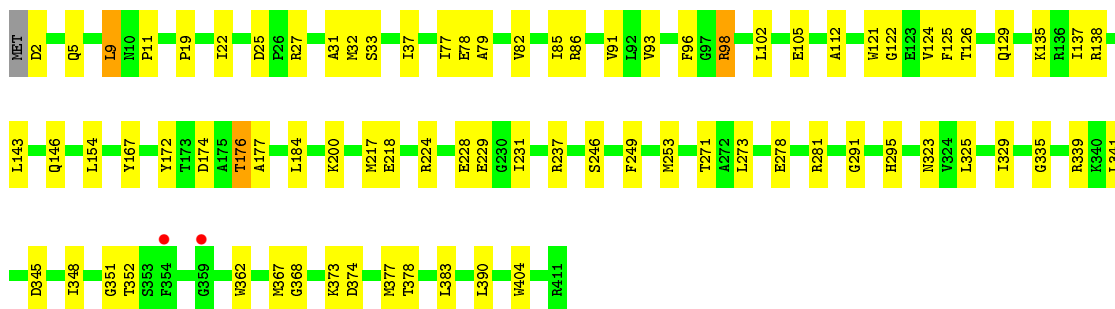
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

Chain D: 79% 19%



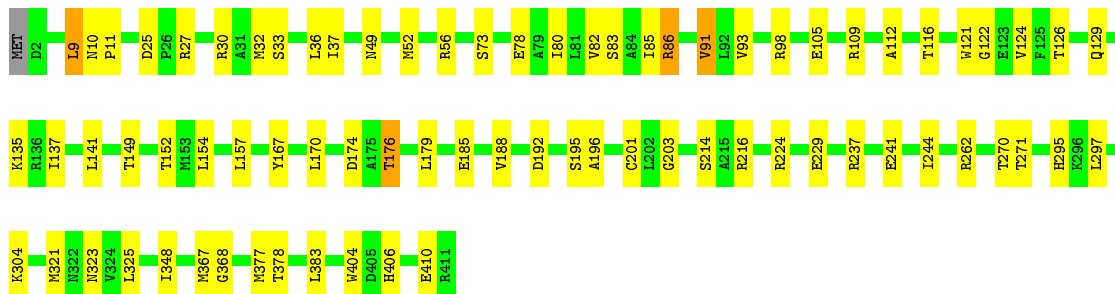
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

Chain E: 80% 19%



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

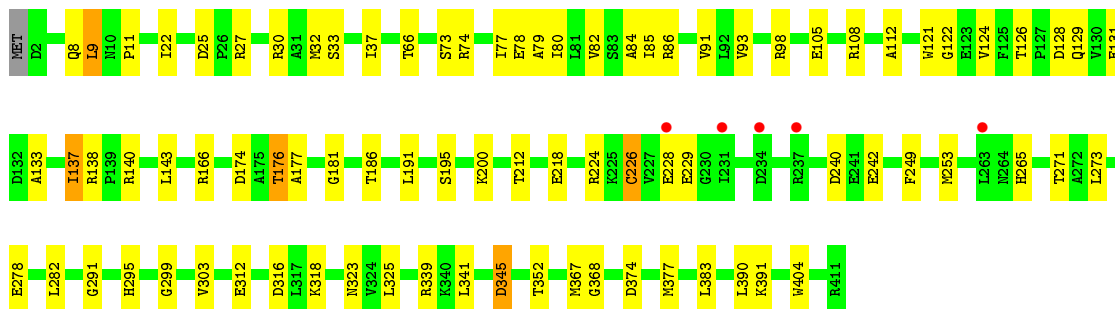
Chain F: 81% 18%



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

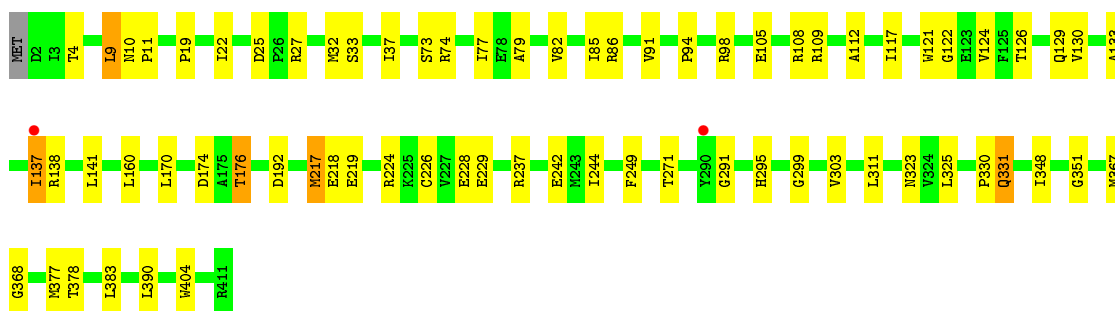
Chain G: 79% 19%





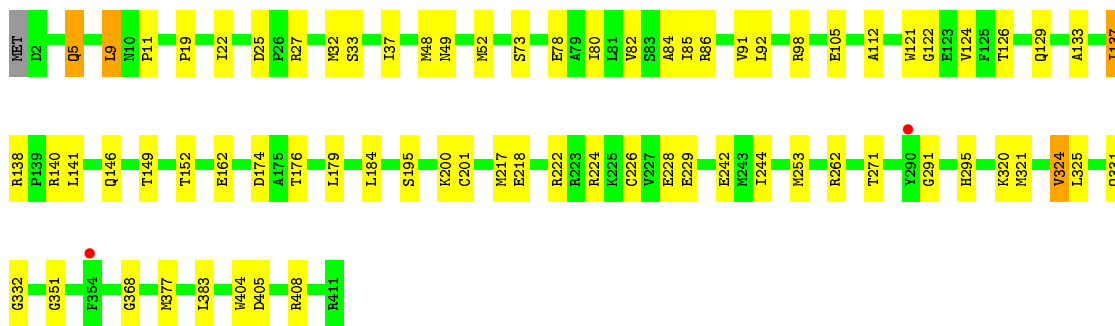
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

Chain H: 82% 16%



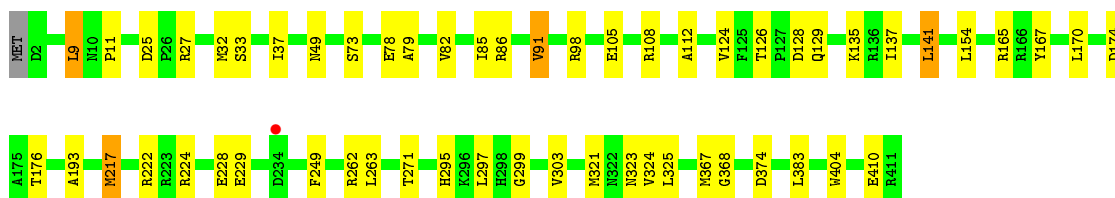
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

Chain J: 82% 17%



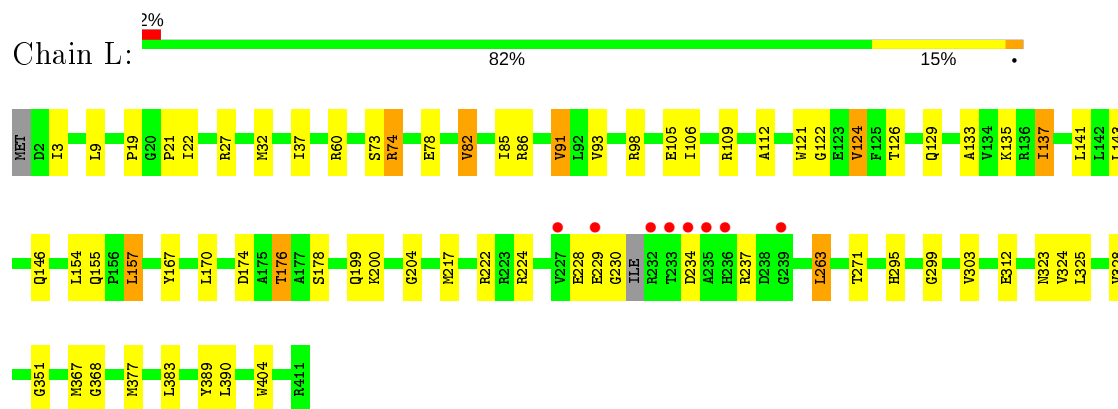
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

Chain K: 86% 13%

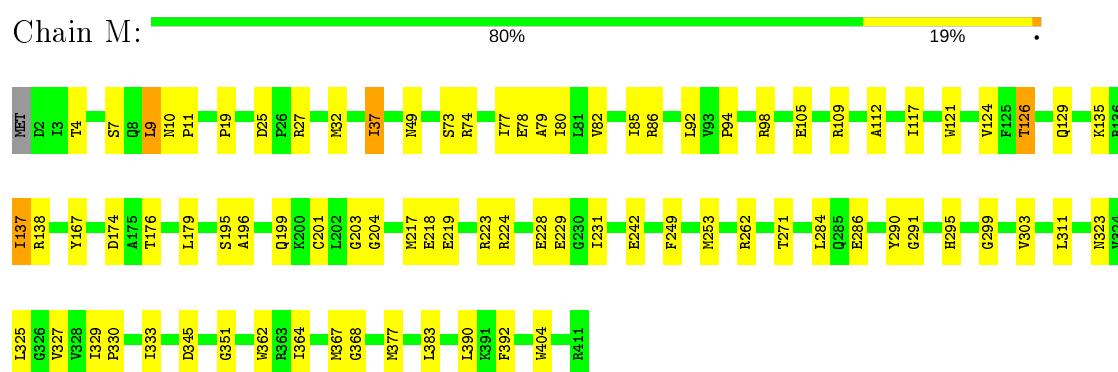


- Molecule 1: Ureidoglycine-glyoxylate aminotransferase

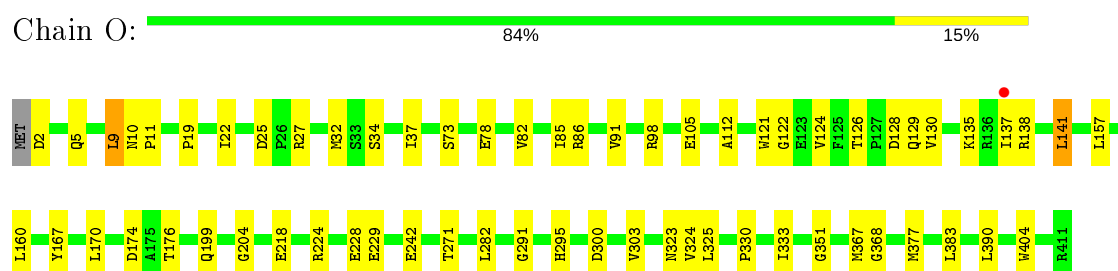




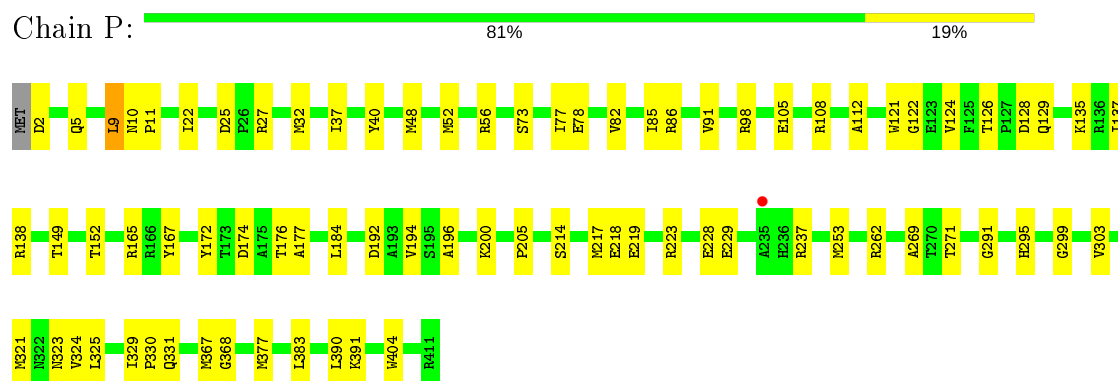
- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



- Molecule 1: Ureidoglycine-glyoxylate aminotransferase



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	142.15Å 149.20Å 198.00Å 90.00° 90.28° 90.00°	Depositor
Resolution (Å)	50.00 – 2.58 49.85 – 2.58	Depositor EDS
% Data completeness (in resolution range)	93.8 (50.00-2.58) 93.9 (49.85-2.58)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.13	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.24 (at 2.58Å)	Xtriage
Refinement program	REFMAC 5.5.0109	Depositor
R, $R_{free}$	0.217 , 0.246 0.192 , 0.217	Depositor DCC
$R_{free}$ test set	12155 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	38.0	Xtriage
Anisotropy	0.613	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 9.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.45$ , $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	0.046 for -k,-h,-l 0.048 for k,h,-l 0.420 for h,-k,-l	Xtriage
Reported twinning fraction	0.549 for H, K, L 0.451 for h,-k,-l	Depositor
Outliers	2 of 242432 reflections (0.001%)	Xtriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	51634	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	33.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.96% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: LLP

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.31	0/3198	0.52	0/4335
1	B	0.31	0/3215	0.51	0/4354
1	C	0.31	0/3204	0.52	1/4341 (0.0%)
1	D	0.32	0/3220	0.52	1/4360 (0.0%)
1	E	0.31	0/3187	0.51	0/4321
1	F	0.31	0/3211	0.52	0/4349
1	G	0.31	0/3204	0.51	0/4341
1	H	0.31	0/3223	0.51	0/4364
1	J	0.31	0/3194	0.52	0/4330
1	K	0.31	0/3215	0.52	2/4354 (0.0%)
1	L	0.31	0/3195	0.52	1/4327 (0.0%)
1	M	0.32	0/3223	0.51	0/4364
1	O	0.31	0/3194	0.52	1/4330 (0.0%)
1	P	0.31	0/3215	0.53	0/4354
1	R	0.31	0/3204	0.51	0/4341
1	S	0.32	0/3219	0.51	0/4358
All	All	0.31	0/51321	0.52	6/69523 (0.0%)

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	K	141	LEU	CA-CB-CG	5.50	127.95	115.30
1	C	141	LEU	CA-CB-CG	5.26	127.40	115.30
1	D	141	LEU	CA-CB-CG	5.22	127.31	115.30
1	L	263	LEU	CA-CB-CG	5.14	127.13	115.30
1	O	141	LEU	CA-CB-CG	5.03	126.87	115.30
1	K	263	LEU	CA-CB-CG	5.03	126.87	115.30

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3158	0	3090	45	0
1	B	3175	0	3127	51	0
1	C	3164	0	3101	46	0
1	D	3180	0	3133	52	0
1	E	3147	0	3076	41	0
1	F	3171	0	3121	47	0
1	G	3164	0	3101	52	0
1	H	3183	0	3135	45	0
1	J	3154	0	3084	42	0
1	K	3175	0	3127	35	0
1	L	3156	0	3089	40	0
1	M	3183	0	3135	47	0
1	O	3154	0	3084	36	0
1	P	3175	0	3127	45	0
1	R	3164	0	3101	45	0
1	S	3179	0	3133	46	0
2	A	41	0	0	0	0
2	B	51	0	0	3	0
2	C	39	0	0	1	0
2	D	33	0	0	0	0
2	E	49	0	0	0	0
2	F	73	0	0	2	0
2	G	66	0	0	2	0
2	H	59	0	0	0	0
2	J	73	0	0	0	0
2	K	71	0	0	0	0
2	L	64	0	0	0	0
2	M	59	0	0	0	0
2	O	69	0	0	0	0
2	P	76	0	0	3	0
2	R	69	0	0	0	0
2	S	60	0	0	0	0
All	All	51634	0	49764	626	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

All (626) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:72:THR:HG23	1:C:200:LLP:OP2	1.58	1.03
1:H:126:THR:H	1:H:129:GLN:HE21	1.14	0.96
1:K:174:ASP:OD1	1:K:176:THR:HG23	1.69	0.92
1:O:295:HIS:HE1	1:O:368:GLY:H	1.14	0.91
1:K:9:LEU:HD13	1:K:11:PRO:HD3	1.53	0.90
1:B:174:ASP:OD1	1:B:176:THR:HG23	1.72	0.89
1:K:126:THR:H	1:K:129:GLN:HE21	1.21	0.88
1:J:9:LEU:HD13	1:J:11:PRO:HD3	1.57	0.86
1:D:174:ASP:OD1	1:D:176:THR:HG23	1.77	0.85
1:G:295:HIS:HE1	1:G:368:GLY:H	1.25	0.83
1:O:126:THR:H	1:O:129:GLN:HE21	1.27	0.81
1:C:72:THR:CG2	1:C:200:LLP:OP2	2.29	0.81
1:R:390:LEU:O	1:R:391:LYS:HB2	1.80	0.80
1:M:25:ASP:OD1	1:M:27:ARG:HD3	1.80	0.80
1:S:78:GLU:O	1:S:82:VAL:HG23	1.81	0.79
1:J:174:ASP:OD1	1:J:176:THR:HG23	1.83	0.79
1:J:85:ILE:HG21	1:J:112:ALA:HB2	1.64	0.79
1:L:78:GLU:O	1:L:82:VAL:HG23	1.82	0.78
1:A:32:MET:SD	1:B:271:THR:HG21	2.23	0.78
1:E:85:ILE:HG21	1:E:112:ALA:HB2	1.66	0.78
1:J:229:GLU:H	1:K:105:GLU:HG3	1.50	0.77
1:S:174:ASP:OD1	1:S:176:THR:HG23	1.84	0.77
1:K:78:GLU:O	1:K:82:VAL:HG23	1.84	0.77
1:O:174:ASP:OD1	1:O:176:THR:HG23	1.85	0.77
1:C:295:HIS:HE1	1:C:368:GLY:H	1.29	0.76
1:F:295:HIS:HE1	1:F:368:GLY:H	1.30	0.76
1:J:295:HIS:HE1	1:J:368:GLY:H	1.32	0.75
1:J:32:MET:SD	1:K:271:THR:HG21	2.26	0.75
1:G:174:ASP:OD1	1:G:176:THR:HG23	1.88	0.73
1:F:297:LEU:HD13	1:F:410:GLU:HG2	1.69	0.73
1:M:295:HIS:HE1	1:M:368:GLY:H	1.34	0.73
1:G:9:LEU:HD13	1:G:11:PRO:HD3	1.70	0.73
1:G:78:GLU:O	1:G:82:VAL:HG23	1.89	0.73
1:O:330:PRO:HG2	1:O:333:ILE:HG13	1.69	0.73
1:J:105:GLU:HG3	1:K:229:GLU:H	1.52	0.73
1:B:323:ASN:HB2	1:B:367:MET:HG2	1.71	0.72
1:E:174:ASP:OD1	1:E:176:THR:HG22	1.89	0.72

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:85:ILE:HG21	1:F:112:ALA:HB2	1.71	0.72
1:A:73:SER:HB3	1:A:176:THR:HG21	1.72	0.72
1:A:85:ILE:HG21	1:A:112:ALA:HB2	1.69	0.72
1:H:9:LEU:HD13	1:H:11:PRO:HD3	1.70	0.72
1:P:295:HIS:HE1	1:P:368:GLY:H	1.34	0.72
1:B:25:ASP:OD1	1:B:27:ARG:HD3	1.90	0.71
1:F:126:THR:H	1:F:129:GLN:HE21	1.38	0.71
1:C:229:GLU:H	1:D:105:GLU:HG3	1.54	0.71
1:P:85:ILE:HG21	1:P:112:ALA:HB2	1.72	0.71
1:A:295:HIS:HE1	1:A:368:GLY:H	1.38	0.71
1:O:295:HIS:HE1	1:O:368:GLY:N	1.89	0.70
1:R:229:GLU:H	1:S:105:GLU:HG3	1.54	0.70
1:A:9:LEU:HD13	1:A:11:PRO:HD3	1.73	0.70
1:C:174:ASP:OD1	1:C:176:THR:HG23	1.92	0.70
1:R:32:MET:SD	1:S:271:THR:HG21	2.32	0.69
1:L:174:ASP:OD1	1:L:176:THR:HG23	1.93	0.69
1:K:295:HIS:HE1	1:K:368:GLY:H	1.40	0.69
1:A:229:GLU:H	1:B:105:GLU:HG3	1.57	0.69
1:B:126:THR:H	1:B:129:GLN:HE21	1.41	0.69
1:E:105:GLU:HG3	1:F:229:GLU:H	1.57	0.69
1:A:291:GLY:O	1:A:295:HIS:HD2	1.76	0.69
1:M:126:THR:H	1:M:129:GLN:HE21	1.39	0.69
1:D:82:VAL:HG12	1:D:244:ILE:HG23	1.73	0.68
1:K:323:ASN:HB2	1:K:367:MET:HG2	1.73	0.68
1:K:85:ILE:HG21	1:K:112:ALA:HB2	1.75	0.68
1:G:229:GLU:H	1:H:105:GLU:HG3	1.58	0.68
1:C:85:ILE:HG21	1:C:112:ALA:HB2	1.75	0.68
1:P:174:ASP:OD1	1:P:176:THR:HG23	1.94	0.68
1:B:295:HIS:HE1	1:B:368:GLY:H	1.42	0.67
1:H:295:HIS:HE1	1:H:368:GLY:H	1.43	0.67
1:R:126:THR:H	1:R:129:GLN:HE21	1.43	0.67
1:P:25:ASP:OD1	1:P:27:ARG:HD3	1.93	0.67
1:R:84:ALA:O	1:R:140:ARG:NH1	2.28	0.67
1:R:105:GLU:HG3	1:S:229:GLU:H	1.59	0.67
1:B:73:SER:HB3	1:B:176:THR:HG21	1.77	0.67
1:D:295:HIS:HE1	1:D:368:GLY:H	1.41	0.67
1:L:323:ASN:HB2	1:L:367:MET:HG2	1.77	0.66
1:H:224:ARG:HD2	1:H:242:GLU:O	1.95	0.66
1:R:174:ASP:OD1	1:R:176:THR:HG23	1.95	0.66
1:M:78:GLU:O	1:M:82:VAL:HG23	1.95	0.66
1:C:105:GLU:HG3	1:D:229:GLU:H	1.60	0.66

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:271:THR:HG21	1:B:32:MET:SD	2.36	0.66
1:J:295:HIS:CE1	1:J:368:GLY:H	2.13	0.66
1:K:141:LEU:HD13	1:K:170:LEU:HB2	1.78	0.66
1:E:9:LEU:HD13	1:E:11:PRO:HD3	1.78	0.66
1:E:229:GLU:H	1:F:105:GLU:HG3	1.60	0.66
1:K:126:THR:H	1:K:129:GLN:NE2	1.94	0.66
1:B:3:ILE:HG13	1:B:3:ILE:O	1.94	0.65
1:D:126:THR:H	1:D:129:GLN:HE21	1.44	0.65
1:G:291:GLY:O	1:G:295:HIS:HD2	1.79	0.65
1:M:291:GLY:O	1:M:295:HIS:HD2	1.78	0.65
1:R:271:THR:HG21	1:S:32:MET:SD	2.37	0.65
1:O:229:GLU:H	1:P:105:GLU:HG3	1.60	0.65
1:R:25:ASP:OD1	1:R:27:ARG:HD3	1.96	0.65
1:M:174:ASP:OD1	1:M:176:THR:HG23	1.97	0.64
1:O:295:HIS:CE1	1:O:368:GLY:H	2.05	0.64
1:D:85:ILE:HG21	1:D:112:ALA:HB2	1.79	0.64
1:R:85:ILE:HG21	1:R:112:ALA:HB2	1.79	0.64
1:S:73:SER:HB3	1:S:176:THR:HG21	1.78	0.64
1:D:177:ALA:HA	1:D:200:LLP:HG2	1.78	0.64
1:E:126:THR:H	1:E:129:GLN:HE21	1.45	0.64
1:O:228:GLU:HG2	1:P:105:GLU:HG3	1.79	0.64
1:S:126:THR:H	1:S:129:GLN:HE21	1.45	0.64
1:B:291:GLY:O	1:B:295:HIS:HD2	1.81	0.64
1:S:85:ILE:HG21	1:S:112:ALA:HB2	1.79	0.64
1:L:105:GLU:HG3	1:M:228:GLU:HG2	1.79	0.63
1:S:9:LEU:HD13	1:S:11:PRO:HD3	1.79	0.63
1:J:73:SER:HB3	1:J:176:THR:HG21	1.80	0.63
1:F:295:HIS:CE1	1:F:368:GLY:H	2.15	0.63
1:H:126:THR:H	1:H:129:GLN:NE2	1.94	0.63
1:J:271:THR:HG21	1:K:32:MET:SD	2.39	0.63
1:E:295:HIS:HE1	1:E:368:GLY:H	1.47	0.63
1:L:135:LYS:HE3	1:L:167:TYR:OH	1.98	0.62
1:O:323:ASN:HB2	1:O:367:MET:HG2	1.82	0.62
1:F:323:ASN:HB2	1:F:367:MET:HG2	1.80	0.62
1:P:135:LYS:HE3	1:P:167:TYR:OH	1.99	0.62
1:F:174:ASP:OD1	1:F:176:THR:HG23	1.98	0.62
1:R:231:ILE:HD13	1:R:264:ASN:O	2.00	0.62
1:G:32:MET:SD	1:H:271:THR:HG21	2.39	0.61
1:R:295:HIS:HE1	1:R:368:GLY:H	1.47	0.61
1:C:323:ASN:HB2	1:C:367:MET:HG2	1.81	0.61
1:A:33:SER:HB3	1:B:33:SER:HB3	1.82	0.61

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:73:SER:HB3	1:F:176:THR:HG21	1.83	0.61
1:A:284:LEU:HB2	1:B:3:ILE:HD13	1.82	0.61
1:P:73:SER:HB3	1:P:176:THR:HG21	1.81	0.61
1:B:85:ILE:HG21	1:B:112:ALA:HB2	1.82	0.61
1:C:2:ASP:O	1:C:5:GLN:HG2	2.01	0.61
1:A:295:HIS:CE1	1:A:368:GLY:H	2.19	0.61
1:M:295:HIS:CE1	1:M:368:GLY:H	2.16	0.61
1:M:333:ILE:HD11	1:M:392:PHE:HB2	1.82	0.61
1:G:105:GLU:HG3	1:H:229:GLU:H	1.66	0.60
1:H:85:ILE:HG21	1:H:112:ALA:HB2	1.83	0.60
1:K:25:ASP:OD1	1:K:27:ARG:HD3	2.01	0.60
1:L:295:HIS:HE1	1:L:368:GLY:H	1.47	0.60
1:M:176:THR:HG22	1:M:196:ALA:HA	1.82	0.60
1:M:323:ASN:HB2	1:M:367:MET:HG2	1.83	0.60
1:L:271:THR:HG21	1:M:32:MET:SD	2.41	0.60
1:S:295:HIS:CE1	1:S:368:GLY:H	2.19	0.60
1:D:141:LEU:HD13	1:D:170:LEU:HB2	1.84	0.60
1:A:105:GLU:HG3	1:B:229:GLU:H	1.65	0.60
1:F:304:LYS:HD2	1:F:406:HIS:HB2	1.84	0.60
1:E:373:LYS:HG2	2:G:921:HOH:O	2.01	0.59
1:G:224:ARG:HD2	1:G:242:GLU:O	2.02	0.59
1:G:295:HIS:HE1	1:G:368:GLY:N	1.98	0.59
1:L:229:GLU:H	1:M:105:GLU:HG3	1.66	0.59
1:L:85:ILE:HG21	1:L:112:ALA:HB2	1.84	0.59
1:M:85:ILE:HG21	1:M:112:ALA:HB2	1.84	0.59
1:O:25:ASP:OD1	1:O:27:ARG:HD3	2.02	0.59
1:L:74:ARG:HD2	1:L:200:LLP:OP2	2.01	0.59
1:S:295:HIS:HE1	1:S:368:GLY:H	1.50	0.59
1:L:73:SER:HB3	1:L:176:THR:HG21	1.83	0.59
1:L:228:GLU:HG2	1:L:230:GLY:H	1.67	0.59
1:P:149:THR:HG22	1:P:324:VAL:HG21	1.84	0.59
1:J:84:ALA:O	1:J:140:ARG:NH1	2.36	0.59
1:P:126:THR:H	1:P:129:GLN:HE21	1.50	0.59
1:P:295:HIS:CE1	1:P:368:GLY:H	2.18	0.59
1:C:295:HIS:CE1	1:C:368:GLY:H	2.17	0.59
1:J:152:THR:HA	1:J:321:MET:HE3	1.85	0.59
1:E:271:THR:HG21	1:F:32:MET:SD	2.42	0.59
1:R:177:ALA:HA	1:R:200:LLP:HG3	1.85	0.59
1:M:73:SER:HB3	1:M:176:THR:HG21	1.85	0.58
1:P:2:ASP:O	1:P:5:GLN:HG2	2.03	0.58
1:A:323:ASN:HB2	1:A:367:MET:HG2	1.85	0.58

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:O:32:MET:SD	1:P:271:THR:HG21	2.44	0.58
1:G:228:GLU:HG2	1:H:105:GLU:HG3	1.84	0.58
1:P:323:ASN:HB2	1:P:367:MET:HG2	1.85	0.58
1:R:323:ASN:HB2	1:R:367:MET:HG2	1.84	0.58
1:R:33:SER:HB3	1:S:33:SER:HB3	1.85	0.58
1:J:226:CYS:SG	1:K:108:ARG:NH1	2.75	0.58
1:K:154:LEU:HD23	1:K:321:MET:HG2	1.86	0.58
1:O:126:THR:H	1:O:129:GLN:NE2	2.00	0.58
1:B:295:HIS:HE1	1:B:368:GLY:N	2.02	0.58
1:D:323:ASN:HB2	1:D:367:MET:HG2	1.84	0.58
1:E:32:MET:SD	1:F:271:THR:HG21	2.44	0.58
1:P:27:ARG:HD2	1:S:10:ASN:ND2	2.19	0.58
1:G:85:ILE:HG21	1:G:112:ALA:HB2	1.84	0.57
1:D:78:GLU:O	1:D:82:VAL:HG23	2.04	0.57
1:F:25:ASP:OD1	1:F:27:ARG:HD3	2.04	0.57
1:C:271:THR:HG21	1:D:32:MET:SD	2.44	0.57
1:H:330:PRO:O	1:H:331:GLN:CB	2.52	0.57
1:O:130:VAL:HG21	1:O:160:LEU:HG	1.85	0.57
1:P:330:PRO:O	1:P:331:GLN:HB2	2.04	0.57
1:E:291:GLY:O	1:E:295:HIS:HD2	1.87	0.57
1:F:135:LYS:HE3	1:F:167:TYR:OH	2.04	0.57
1:O:78:GLU:O	1:O:82:VAL:HG23	2.03	0.57
1:O:105:GLU:HG3	1:P:228:GLU:HG2	1.86	0.57
1:E:135:LYS:HE3	1:E:167:TYR:OH	2.04	0.57
1:B:135:LYS:HE3	1:B:167:TYR:OH	2.04	0.57
1:G:271:THR:HG21	1:H:32:MET:SD	2.45	0.57
1:P:126:THR:H	1:P:129:GLN:NE2	2.03	0.57
1:D:25:ASP:OD1	1:D:27:ARG:HD3	2.04	0.57
1:E:79:ALA:HA	1:E:249:PHE:HB3	1.87	0.57
1:B:40:TYR:HE1	1:B:262:ARG:HB3	1.70	0.56
1:C:72:THR:HG21	1:D:266:HIS:HB2	1.87	0.56
1:B:231:ILE:HD12	1:B:263:LEU:HD13	1.87	0.56
1:L:32:MET:SD	1:M:271:THR:HG21	2.45	0.56
1:P:78:GLU:O	1:P:82:VAL:HG23	2.05	0.56
1:J:105:GLU:HG3	1:K:228:GLU:HG2	1.87	0.56
1:R:9:LEU:HD13	1:R:11:PRO:HD3	1.87	0.56
1:E:323:ASN:HB2	1:E:367:MET:HG2	1.87	0.56
1:M:311:LEU:CD2	1:M:330:PRO:HG3	2.35	0.56
1:B:93:VAL:HG22	1:B:143:LEU:HB2	1.87	0.56
1:C:25:ASP:OD1	1:C:27:ARG:HD3	2.06	0.56
1:M:49:ASN:HD21	1:M:262:ARG:HH22	1.53	0.56

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:ASP:OD1	1:A:176:THR:HG23	2.05	0.56
1:B:19:PRO:HD3	1:B:351:GLY:HA3	1.88	0.56
1:F:91:VAL:HG22	1:F:141:LEU:HB2	1.88	0.56
1:R:108:ARG:NH1	1:S:226:CYS:SG	2.79	0.56
1:G:105:GLU:HG3	1:H:228:GLU:HG2	1.88	0.56
1:G:25:ASP:OD1	1:G:27:ARG:HD3	2.06	0.55
1:G:33:SER:HB3	1:H:33:SER:HB3	1.86	0.55
1:O:105:GLU:HG3	1:P:229:GLU:H	1.71	0.55
1:D:299:GLY:O	1:D:303:VAL:HG23	2.06	0.55
1:G:228:GLU:H	1:G:253:MET:HE3	1.71	0.55
1:H:25:ASP:OD1	1:H:27:ARG:HD3	2.06	0.55
1:K:126:THR:HG22	1:K:128:ASP:H	1.71	0.55
1:O:141:LEU:HD13	1:O:170:LEU:HB2	1.87	0.55
1:H:82:VAL:HG12	1:H:244:ILE:HG23	1.88	0.55
1:K:295:HIS:CE1	1:K:368:GLY:H	2.21	0.55
1:B:27:ARG:HD2	1:D:10:ASN:ND2	2.22	0.55
1:P:299:GLY:O	1:P:303:VAL:HG23	2.07	0.55
1:L:199:GLN:HA	1:L:204:GLY:O	2.06	0.55
1:M:105:GLU:O	1:M:109:ARG:HG2	2.06	0.55
1:O:9:LEU:HD13	1:O:11:PRO:HD3	1.89	0.54
1:E:177:ALA:HA	1:E:200:LLP:HG3	1.90	0.54
1:F:78:GLU:O	1:F:82:VAL:HG23	2.07	0.54
1:O:271:THR:HG21	1:P:32:MET:SD	2.48	0.54
1:B:82:VAL:HG12	1:B:244:ILE:HG23	1.90	0.54
1:E:25:ASP:OD1	1:E:27:ARG:HD3	2.07	0.54
1:K:49:ASN:HD21	1:K:262:ARG:HH22	1.55	0.54
1:R:105:GLU:CG	1:S:229:GLU:H	2.19	0.54
1:R:390:LEU:O	1:R:391:LYS:CB	2.52	0.54
1:G:229:GLU:H	1:H:105:GLU:CG	2.21	0.54
1:H:141:LEU:HD13	1:H:170:LEU:HB2	1.90	0.54
1:E:341:LEU:O	1:E:345:ASP:HB2	2.08	0.53
1:S:299:GLY:O	1:S:303:VAL:HG23	2.08	0.53
1:J:33:SER:HB3	1:K:33:SER:HB3	1.90	0.53
1:S:323:ASN:HB2	1:S:367:MET:HG2	1.89	0.53
1:O:73:SER:HB3	1:O:176:THR:HG21	1.90	0.53
1:R:78:GLU:O	1:R:82:VAL:HG23	2.07	0.53
1:F:49:ASN:HD21	1:F:262:ARG:HH22	1.55	0.53
1:L:199:GLN:NE2	1:L:200:LLP:OP3	2.40	0.53
1:P:126:THR:HG22	1:P:128:ASP:H	1.72	0.53
1:R:228:GLU:HG2	1:S:105:GLU:HG3	1.91	0.53
1:H:82:VAL:HG12	1:H:244:ILE:CG2	2.39	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:149:THR:HA	1:J:321:MET:HE1	1.91	0.53
1:O:85:ILE:HG21	1:O:112:ALA:HB2	1.91	0.53
1:P:321:MET:SD	2:P:552:HOH:O	2.59	0.53
1:J:408:ARG:HB2	1:S:360:LYS:NZ	2.23	0.53
1:C:291:GLY:O	1:C:295:HIS:HD2	1.91	0.53
1:D:295:HIS:CE1	1:D:368:GLY:H	2.25	0.53
1:E:31:ALA:HB2	1:E:278:GLU:HG3	1.91	0.53
1:J:291:GLY:O	1:J:295:HIS:HD2	1.91	0.53
1:H:323:ASN:HB2	1:H:367:MET:HG2	1.91	0.53
1:L:299:GLY:O	1:L:303:VAL:HG23	2.09	0.53
1:G:177:ALA:HA	1:G:200:LLP:HG3	1.91	0.52
1:F:9:LEU:HD13	1:F:11:PRO:HD3	1.92	0.52
1:P:9:LEU:HD12	1:P:11:PRO:HD3	1.92	0.52
1:D:73:SER:HB3	1:D:176:THR:HG21	1.92	0.52
1:B:84:ALA:O	1:B:140:ARG:NH1	2.43	0.52
1:F:83:SER:HA	1:F:244:ILE:HG12	1.91	0.52
1:P:176:THR:HG22	1:P:196:ALA:C	2.30	0.52
1:M:79:ALA:HA	1:M:249:PHE:HB3	1.91	0.52
1:R:295:HIS:HE1	1:R:368:GLY:N	2.08	0.52
1:J:405:ASP:O	1:S:360:LYS:HE3	2.10	0.52
1:G:291:GLY:O	1:G:295:HIS:CD2	2.61	0.52
1:G:105:GLU:CG	1:H:229:GLU:H	2.22	0.52
1:G:93:VAL:HG22	1:G:143:LEU:HB2	1.90	0.51
1:J:105:GLU:CG	1:K:229:GLU:H	2.19	0.51
1:M:224:ARG:HD2	1:M:242:GLU:O	2.10	0.51
1:C:94:PRO:HA	1:C:117:ILE:HG13	1.93	0.51
1:D:126:THR:HG22	1:D:128:ASP:H	1.74	0.51
1:L:78:GLU:HG3	1:L:106:ILE:HG23	1.93	0.51
1:C:9:LEU:HD23	1:D:277:ARG:HD3	1.92	0.51
1:F:86:ARG:HH21	1:F:241:GLU:CD	2.13	0.51
1:L:389:TYR:CZ	1:S:331:GLN:HB3	2.45	0.51
1:A:224:ARG:HD2	1:A:242:GLU:O	2.10	0.51
1:S:153:MET:HE1	1:S:316:ASP:O	2.10	0.51
1:E:228:GLU:HG2	1:F:105:GLU:HG3	1.93	0.51
1:C:228:GLU:HG2	1:D:105:GLU:HG3	1.92	0.51
1:G:186:THR:HA	1:G:191:LEU:HD12	1.93	0.51
1:R:2:ASP:O	1:R:5:GLN:HG2	2.11	0.51
1:A:1:MET:HB3	1:A:2:ASP:HA	1.91	0.51
1:B:9:LEU:HD13	1:B:11:PRO:HD3	1.93	0.51
1:B:24:ALA:HB1	2:B:833:HOH:O	2.10	0.51
1:G:126:THR:H	1:G:129:GLN:NE2	2.07	0.51

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:135:LYS:HE3	1:K:167:TYR:OH	2.11	0.51
1:O:2:ASP:O	1:O:5:GLN:HG2	2.10	0.51
1:P:40:TYR:HE1	1:P:262:ARG:HB3	1.75	0.51
1:S:83:SER:HA	1:S:244:ILE:HG12	1.93	0.51
1:F:27:ARG:HD2	1:H:10:ASN:ND2	2.26	0.51
1:B:47:TYR:O	1:B:51:VAL:HG23	2.11	0.50
1:B:80:ILE:HD12	1:B:195:SER:HB3	1.93	0.50
1:H:73:SER:HB3	1:H:176:THR:HG21	1.93	0.50
1:L:105:GLU:HG3	1:M:229:GLU:H	1.75	0.50
1:L:146:GLN:NE2	1:L:178:SER:OG	2.44	0.50
1:D:91:VAL:HG22	1:D:141:LEU:HB2	1.94	0.50
1:J:49:ASN:HD21	1:J:262:ARG:HH22	1.60	0.50
1:C:141:LEU:HD13	1:C:170:LEU:HB2	1.93	0.50
1:E:281:ARG:HH22	1:G:8:GLN:NE2	2.10	0.50
1:H:348:ILE:HD11	1:H:378:THR:HG22	1.93	0.50
1:K:73:SER:HB3	1:K:176:THR:HG21	1.92	0.50
1:C:40:TYR:HE1	1:C:262:ARG:HB3	1.76	0.50
1:J:228:GLU:HB3	1:J:253:MET:HE1	1.94	0.50
1:L:126:THR:H	1:L:129:GLN:HE21	1.60	0.50
1:G:82:VAL:O	1:G:224:ARG:NH2	2.45	0.50
1:L:133:ALA:O	1:L:137:ILE:HD13	2.12	0.50
1:C:32:MET:SD	1:D:271:THR:HG21	2.52	0.49
1:D:92:LEU:HB2	1:D:137:ILE:HD11	1.94	0.49
1:G:126:THR:H	1:G:129:GLN:HE21	1.59	0.49
1:F:141:LEU:HD13	1:F:170:LEU:HB2	1.95	0.49
1:G:323:ASN:HB2	1:G:367:MET:HG2	1.94	0.49
1:K:27:ARG:HD2	1:M:10:ASN:ND2	2.27	0.49
1:C:72:THR:HG23	1:C:200:LLP:P	2.49	0.49
1:R:229:GLU:H	1:S:105:GLU:CG	2.23	0.49
1:A:228:GLU:HG2	1:B:105:GLU:HG3	1.93	0.49
1:D:9:LEU:CD1	1:D:11:PRO:HD3	2.43	0.49
1:S:303:VAL:HG22	1:S:325:LEU:HG	1.94	0.49
1:B:176:THR:HG22	1:B:196:ALA:HA	1.93	0.49
1:H:174:ASP:OD1	1:H:176:THR:HG23	2.12	0.49
1:L:389:TYR:CE1	1:S:331:GLN:HB3	2.47	0.49
1:G:265:HIS:HB2	2:G:440:HOH:O	2.10	0.49
1:L:141:LEU:HD13	1:L:170:LEU:HB2	1.94	0.49
1:C:82:VAL:O	1:C:224:ARG:NH2	2.46	0.49
1:E:33:SER:HB3	1:F:33:SER:HB3	1.95	0.49
1:M:329:ILE:HG12	1:M:362:TRP:CE2	2.47	0.49
1:R:224:ARG:HD2	1:R:242:GLU:O	2.13	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:31:ALA:HB2	1:B:278:GLU:HG3	1.94	0.49
1:R:161:GLY:HA3	1:R:189:TRP:O	2.13	0.48
1:R:176:THR:HG22	1:R:196:ALA:HA	1.95	0.48
1:F:185:GLU:HB3	1:F:188:VAL:HB	1.94	0.48
1:J:19:PRO:HD3	1:J:351:GLY:HA3	1.94	0.48
1:L:146:GLN:HG3	1:L:157:LEU:HD22	1.95	0.48
1:A:126:THR:H	1:A:129:GLN:HE21	1.62	0.48
1:D:93:VAL:HG22	1:D:143:LEU:HB2	1.95	0.48
1:G:84:ALA:O	1:G:140:ARG:NH1	2.47	0.48
1:D:121:TRP:HA	1:D:122:GLY:HA2	1.69	0.48
1:K:374:ASP:HA	1:M:345:ASP:O	2.13	0.48
1:H:295:HIS:CE1	1:H:368:GLY:H	2.29	0.48
1:D:9:LEU:HD13	1:D:11:PRO:HD3	1.96	0.48
1:G:73:SER:HB3	1:G:176:THR:HG21	1.94	0.48
1:G:278:GLU:O	1:G:282:LEU:HG	2.13	0.48
1:J:78:GLU:O	1:J:82:VAL:HG23	2.14	0.48
1:F:152:THR:HA	1:F:321:MET:CE	2.43	0.48
1:F:85:ILE:O	1:F:224:ARG:NH2	2.47	0.48
1:L:3:ILE:HD13	1:M:284:LEU:HB2	1.94	0.48
1:A:121:TRP:HA	1:A:122:GLY:HA2	1.71	0.48
1:F:152:THR:HA	1:F:321:MET:HE2	1.96	0.48
1:F:52:MET:O	1:F:56:ARG:HG3	2.14	0.48
1:M:9:LEU:HD12	1:M:11:PRO:HD3	1.95	0.48
1:R:181:GLY:HA2	1:R:295:HIS:CD2	2.49	0.48
1:B:153:MET:HE1	1:B:316:ASP:HB3	1.95	0.48
1:G:79:ALA:HA	1:G:249:PHE:HB3	1.96	0.48
1:A:27:ARG:HD2	1:C:10:ASN:ND2	2.29	0.47
1:L:389:TYR:O	1:S:331:GLN:OE1	2.31	0.47
1:R:135:LYS:HE3	1:R:167:TYR:OH	2.14	0.47
1:E:78:GLU:O	1:E:82:VAL:HG23	2.14	0.47
1:H:19:PRO:HD3	1:H:351:GLY:HA3	1.96	0.47
1:C:74:ARG:HH21	1:C:102:LEU:HD13	1.79	0.47
1:H:94:PRO:HA	1:H:117:ILE:HG13	1.95	0.47
1:J:331:GLN:HA	1:J:332:GLY:HA2	1.64	0.47
1:L:121:TRP:HA	1:L:122:GLY:HA2	1.71	0.47
1:M:94:PRO:HA	1:M:117:ILE:HG13	1.96	0.47
1:E:96:PHE:HB3	1:E:125:PHE:CE2	2.50	0.47
1:G:316:ASP:OD1	1:G:318:LYS:HE3	2.15	0.47
1:H:311:LEU:CD2	1:H:330:PRO:HG3	2.44	0.47
1:J:229:GLU:H	1:K:105:GLU:CG	2.24	0.47
1:B:157:LEU:HG	1:B:171:PHE:HZ	1.80	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:192:ASP:HA	1:F:214:SER:HB3	1.96	0.47
1:L:93:VAL:HG22	1:L:143:LEU:HB2	1.95	0.47
1:A:1:MET:HB3	1:A:2:ASP:CA	2.45	0.47
1:A:79:ALA:HA	1:A:249:PHE:HB3	1.97	0.47
1:P:177:ALA:HA	1:P:200:LLP:HG3	1.97	0.47
1:S:177:ALA:HA	1:S:200:LLP:HG3	1.97	0.47
1:A:78:GLU:O	1:A:82:VAL:HG23	2.15	0.47
1:B:299:GLY:O	1:B:303:VAL:HG23	2.14	0.47
1:C:79:ALA:HA	1:C:249:PHE:HB3	1.97	0.47
1:P:192:ASP:HA	1:P:214:SER:HB3	1.96	0.47
1:P:205:PRO:HD2	2:P:903:HOH:O	2.14	0.47
1:A:153:MET:HE1	1:A:319:HIS:HB2	1.95	0.47
1:C:227:VAL:HG21	1:C:236:HIS:CD2	2.49	0.47
1:G:181:GLY:HA2	1:G:295:HIS:CD2	2.50	0.47
1:G:339:ARG:CZ	1:G:352:THR:HB	2.45	0.47
1:G:66:THR:HG23	1:G:212:THR:HB	1.97	0.47
1:H:192:ASP:HB3	1:H:217:MET:HG2	1.97	0.47
1:L:19:PRO:HD3	1:L:351:GLY:HA3	1.97	0.47
1:L:295:HIS:CE1	1:L:368:GLY:H	2.32	0.47
1:C:49:ASN:HD21	1:C:262:ARG:HH22	1.63	0.47
1:H:299:GLY:O	1:H:303:VAL:HG23	2.16	0.47
1:D:254:VAL:O	1:D:258:TRP:HD1	1.98	0.46
1:B:82:VAL:HG12	1:B:244:ILE:CG2	2.46	0.46
1:E:146:GLN:HE22	1:E:184:LEU:HD13	1.80	0.46
1:E:348:ILE:HD11	1:E:378:THR:HG22	1.96	0.46
1:O:105:GLU:CG	1:P:229:GLU:H	2.27	0.46
1:A:84:ALA:O	1:A:140:ARG:NH1	2.48	0.46
1:B:224:ARG:HD2	1:B:242:GLU:O	2.16	0.46
1:C:105:GLU:HG3	1:D:228:GLU:HG2	1.96	0.46
1:J:80:ILE:HD12	1:J:195:SER:HB3	1.97	0.46
1:D:78:GLU:HG3	1:D:106:ILE:HG23	1.96	0.46
1:D:177:ALA:HB2	1:D:200:LLP:O3	2.16	0.46
1:A:192:ASP:HB3	1:A:217:MET:HG2	1.97	0.46
1:B:28:VAL:HB	2:B:833:HOH:O	2.15	0.46
1:D:82:VAL:O	1:D:224:ARG:NH2	2.49	0.46
1:S:121:TRP:HA	1:S:122:GLY:HA2	1.68	0.46
1:L:124:VAL:HG22	1:L:155:GLN:OE1	2.16	0.46
1:A:138:ARG:HH21	1:A:167:TYR:HB3	1.80	0.46
1:A:141:LEU:HD13	1:A:170:LEU:HB2	1.98	0.46
1:E:231:ILE:HD11	1:E:253:MET:HE3	1.97	0.46
1:E:295:HIS:HE1	1:E:368:GLY:N	2.13	0.46

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:105:GLU:O	1:F:109:ARG:HG2	2.15	0.46
1:H:79:ALA:HA	1:H:249:PHE:HB3	1.98	0.46
1:J:121:TRP:HA	1:J:122:GLY:HA2	1.69	0.46
1:P:184:LEU:HD21	1:P:194:VAL:HG11	1.98	0.46
1:G:74:ARG:HA	1:G:77:ILE:HD12	1.97	0.46
1:A:329:ILE:HG12	1:A:362:TRP:CE2	2.50	0.46
1:C:74:ARG:HA	1:C:77:ILE:HD12	1.97	0.46
1:G:121:TRP:HA	1:G:122:GLY:HA2	1.71	0.46
1:P:291:GLY:O	1:P:295:HIS:HD2	1.99	0.46
1:S:135:LYS:HE3	1:S:167:TYR:OH	2.16	0.46
1:A:199:GLN:HA	1:A:204:GLY:O	2.16	0.45
1:H:91:VAL:HG22	1:H:141:LEU:HB2	1.97	0.45
1:D:162:GLU:OE2	1:D:165:ARG:NH2	2.46	0.45
1:E:2:ASP:O	1:E:5:GLN:HG2	2.16	0.45
1:J:25:ASP:OD1	1:J:27:ARG:HD3	2.16	0.45
1:R:73:SER:HB3	1:R:176:THR:HG21	1.99	0.45
1:S:25:ASP:OD1	1:S:27:ARG:HD3	2.16	0.45
1:B:121:TRP:HA	1:B:122:GLY:HA2	1.72	0.45
1:B:91:VAL:HG22	1:B:141:LEU:HB2	1.97	0.45
1:K:91:VAL:HG22	1:K:141:LEU:HB2	1.97	0.45
1:G:299:GLY:O	1:G:303:VAL:HG23	2.16	0.45
1:K:299:GLY:O	1:K:303:VAL:HG23	2.16	0.45
1:M:219:GLU:O	1:M:223:ARG:HG3	2.16	0.45
1:P:295:HIS:HE1	1:P:368:GLY:N	2.08	0.45
1:G:126:THR:HG22	1:G:128:ASP:H	1.81	0.45
1:L:3:ILE:HD13	1:M:284:LEU:CB	2.46	0.45
1:P:329:ILE:HA	1:P:330:PRO:HD3	1.85	0.45
1:R:179:LEU:O	1:R:201:CYS:HB2	2.17	0.45
1:J:224:ARG:HD2	1:J:242:GLU:O	2.17	0.45
1:M:231:ILE:HD11	1:M:253:MET:HE3	1.99	0.45
1:O:126:THR:HG22	1:O:128:ASP:H	1.82	0.45
1:R:98:ARG:NH1	1:R:102:LEU:HB2	2.31	0.45
1:B:278:GLU:HG2	2:B:601:HOH:O	2.15	0.45
1:M:49:ASN:ND2	1:M:262:ARG:HH22	2.13	0.45
1:A:105:GLU:O	1:A:109:ARG:HG2	2.17	0.45
1:F:295:HIS:HE1	1:F:368:GLY:N	2.06	0.45
1:O:291:GLY:O	1:O:295:HIS:HD2	1.99	0.45
1:S:126:THR:HG22	1:S:128:ASP:H	1.82	0.45
1:A:130:VAL:O	1:A:134:VAL:HG23	2.17	0.45
1:D:152:THR:HA	1:D:321:MET:HE3	1.99	0.45
1:C:93:VAL:HG22	1:C:143:LEU:HB2	1.99	0.45

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:40:TYR:HE1	1:D:262:ARG:HB3	1.82	0.45
1:D:84:ALA:O	1:D:140:ARG:NH1	2.49	0.45
1:F:154:LEU:HD23	1:F:321:MET:HG2	1.99	0.45
1:F:216:ARG:HG3	2:F:488:HOH:O	2.16	0.45
1:M:92:LEU:HB2	1:M:137:ILE:HD11	1.99	0.45
1:A:5:GLN:H	1:A:5:GLN:HG2	1.59	0.44
1:D:80:ILE:HD12	1:D:195:SER:HB3	1.99	0.44
1:H:74:ARG:HA	1:H:77:ILE:HD12	1.99	0.44
1:M:74:ARG:HA	1:M:77:ILE:HD12	1.99	0.44
1:E:93:VAL:HG22	1:E:143:LEU:HB2	2.00	0.44
1:B:141:LEU:HD13	1:B:170:LEU:HB2	1.98	0.44
1:P:48:MET:O	1:P:52:MET:HG3	2.16	0.44
1:D:203:GLY:N	1:D:204:GLY:HA3	2.32	0.44
1:F:30:ARG:HD2	1:G:30:ARG:O	2.17	0.44
1:H:82:VAL:O	1:H:224:ARG:NH2	2.51	0.44
1:S:146:GLN:NE2	1:S:178:SER:OG	2.50	0.44
1:F:10:ASN:ND2	1:H:27:ARG:HD2	2.33	0.44
1:R:121:TRP:HA	1:R:122:GLY:HA2	1.72	0.44
1:A:73:SER:HB3	1:A:176:THR:CG2	2.44	0.44
1:D:146:GLN:NE2	1:D:178:SER:OG	2.51	0.44
1:G:108:ARG:NH1	1:H:226:CYS:SG	2.90	0.44
1:H:330:PRO:O	1:H:331:GLN:HB3	2.17	0.44
1:R:61:THR:HB	1:R:186:THR:HB	2.00	0.44
1:S:124:VAL:HG22	1:S:155:GLN:OE1	2.18	0.44
1:A:229:GLU:H	1:B:105:GLU:CG	2.26	0.44
1:B:92:LEU:HD22	1:B:137:ILE:CD1	2.48	0.44
1:D:291:GLY:O	1:D:295:HIS:HD2	2.00	0.44
1:H:291:GLY:O	1:H:295:HIS:HD2	2.01	0.44
1:C:299:GLY:O	1:C:303:VAL:HG23	2.18	0.44
1:F:348:ILE:HD11	1:F:378:THR:HG22	2.00	0.44
1:O:135:LYS:HE2	1:O:167:TYR:OH	2.18	0.44
1:R:19:PRO:HD3	1:R:351:GLY:HA3	1.98	0.44
1:R:291:GLY:O	1:R:295:HIS:HD2	2.01	0.44
1:B:69:VAL:HB	1:B:209:SER:HB3	1.99	0.43
1:C:312:GLU:HG3	1:C:328:VAL:HB	2.00	0.43
1:A:19:PRO:HD3	1:A:351:GLY:HA3	2.01	0.43
1:F:36:LEU:HD22	1:F:270:THR:HB	2.00	0.43
1:O:19:PRO:HD3	1:O:351:GLY:HA3	1.99	0.43
1:E:31:ALA:CB	1:E:278:GLU:HG3	2.49	0.43
1:F:93:VAL:HB	1:F:116:THR:HG22	2.01	0.43
1:G:74:ARG:HD2	1:G:200:LLP:OP2	2.19	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:121:TRP:N	1:L:121:TRP:CD1	2.86	0.43
1:M:19:PRO:HD3	1:M:351:GLY:HA3	1.99	0.43
1:C:160:LEU:HA	1:C:163:ILE:HD12	2.00	0.43
1:C:91:VAL:HG22	1:C:141:LEU:HB2	2.00	0.43
1:C:149:THR:HG22	1:C:324:VAL:HG21	2.00	0.43
1:D:231:ILE:HD11	1:D:253:MET:CE	2.49	0.43
1:E:329:ILE:HG12	1:E:362:TRP:CE2	2.54	0.43
1:O:27:ARG:HD2	1:R:10:ASN:ND2	2.33	0.43
1:O:10:ASN:ND2	1:R:27:ARG:HD2	2.34	0.43
1:R:79:ALA:HA	1:R:249:PHE:HB3	2.01	0.43
1:M:80:ILE:HD12	1:M:195:SER:HB3	2.00	0.43
1:D:231:ILE:HD11	1:D:253:MET:HE3	2.00	0.43
1:J:92:LEU:HB2	1:J:137:ILE:HD11	2.01	0.43
1:J:146:GLN:NE2	1:J:184:LEU:HD13	2.34	0.43
1:K:85:ILE:O	1:K:224:ARG:NH2	2.52	0.43
1:M:299:GLY:O	1:M:303:VAL:HG23	2.19	0.43
1:S:253:MET:CE	1:S:265:HIS:HD2	2.32	0.43
1:B:130:VAL:O	1:B:134:VAL:HG23	2.18	0.43
1:D:161:GLY:HA3	1:D:189:TRP:O	2.18	0.43
1:D:330:PRO:O	1:D:331:GLN:CB	2.67	0.43
1:E:345:ASP:O	1:G:374:ASP:HA	2.19	0.43
1:E:329:ILE:HD13	1:E:335:GLY:HA3	2.01	0.43
1:O:27:ARG:NH2	1:O:282:LEU:HD22	2.33	0.43
1:H:295:HIS:HE1	1:H:368:GLY:N	2.14	0.42
1:P:219:GLU:O	1:P:223:ARG:HG3	2.19	0.42
1:R:149:THR:O	1:R:363:ARG:HD2	2.19	0.42
1:S:141:LEU:HD13	1:S:170:LEU:HB2	2.00	0.42
1:A:341:LEU:O	1:A:345:ASP:HB2	2.18	0.42
1:B:146:GLN:NE2	1:B:178:SER:OG	2.52	0.42
1:F:121:TRP:HA	1:F:122:GLY:HA2	1.67	0.42
1:J:179:LEU:O	1:J:201:CYS:HB2	2.19	0.42
1:M:32:MET:HG2	1:M:271:THR:HG22	2.01	0.42
1:O:199:GLN:HA	1:O:204:GLY:O	2.19	0.42
1:O:229:GLU:H	1:P:105:GLU:CG	2.27	0.42
1:P:52:MET:O	1:P:56:ARG:HG3	2.20	0.42
1:R:334:ASN:HB3	1:R:337:GLN:HB2	2.00	0.42
1:L:312:GLU:HB2	1:L:328:VAL:HB	2.01	0.42
1:M:37:ILE:H	1:M:37:ILE:HD13	1.84	0.42
1:P:10:ASN:ND2	1:S:27:ARG:HD2	2.34	0.42
1:S:74:ARG:HA	1:S:77:ILE:HD12	2.01	0.42
1:A:105:GLU:HG3	1:B:228:GLU:HG2	2.00	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:391:LYS:HB2	1:C:391:LYS:HE2	1.83	0.42
1:D:295:HIS:HE1	1:D:368:GLY:N	2.14	0.42
1:O:295:HIS:CE1	1:O:368:GLY:N	2.76	0.42
1:E:19:PRO:HD3	1:E:351:GLY:HA3	2.01	0.42
1:G:80:ILE:HD12	1:G:195:SER:HB3	2.00	0.42
1:G:226:CYS:SG	1:H:108:ARG:NH1	2.92	0.42
1:H:130:VAL:HG21	1:H:160:LEU:HG	2.02	0.42
1:M:135:LYS:HE3	1:M:167:TYR:OH	2.20	0.42
1:M:286:GLU:O	1:M:290:TYR:HD2	2.02	0.42
1:R:82:VAL:O	1:R:224:ARG:NH2	2.52	0.42
1:S:9:LEU:CD1	1:S:11:PRO:HD3	2.48	0.42
1:D:105:GLU:O	1:D:109:ARG:HG2	2.20	0.42
1:F:80:ILE:HD12	1:F:195:SER:HB3	2.01	0.42
1:H:121:TRP:HA	1:H:122:GLY:HA2	1.69	0.42
1:C:73:SER:HB3	1:C:176:THR:HG21	2.01	0.42
1:C:105:GLU:CG	1:D:229:GLU:H	2.29	0.42
1:E:96:PHE:HB3	1:E:125:PHE:HE2	1.85	0.42
1:J:73:SER:HB2	1:J:200:LLP:OP4	2.20	0.42
1:K:193:ALA:HB2	1:K:217:MET:HG3	2.02	0.42
1:A:121:TRP:CD1	1:A:121:TRP:N	2.86	0.42
1:E:339:ARG:NE	1:E:352:THR:HB	2.35	0.42
1:J:320:LYS:HE2	1:J:324:VAL:O	2.20	0.42
1:A:2:ASP:CG	1:A:3:ILE:H	2.23	0.41
1:B:9:LEU:CD1	1:B:11:PRO:HD3	2.50	0.41
1:L:105:GLU:O	1:L:109:ARG:HG3	2.20	0.41
1:M:126:THR:H	1:M:129:GLN:NE2	2.10	0.41
1:B:303:VAL:HG22	1:B:325:LEU:HG	2.01	0.41
1:F:179:LEU:O	1:F:201:CYS:HB2	2.20	0.41
1:K:79:ALA:HA	1:K:249:PHE:HB3	2.02	0.41
1:R:253:MET:HB3	1:R:253:MET:HE2	1.87	0.41
1:A:83:SER:C	1:A:224:ARG:HH21	2.24	0.41
1:E:98:ARG:NH1	1:E:102:LEU:HB2	2.35	0.41
1:J:48:MET:O	1:J:52:MET:HG3	2.21	0.41
1:O:121:TRP:HA	1:O:122:GLY:HA2	1.70	0.41
1:O:300:ASP:HA	1:O:303:VAL:HG12	2.02	0.41
1:C:78:GLU:O	1:C:82:VAL:HG23	2.19	0.41
1:L:85:ILE:O	1:L:224:ARG:NH2	2.53	0.41
1:P:152:THR:HA	1:P:321:MET:CE	2.50	0.41
1:C:121:TRP:HA	1:C:122:GLY:HA2	1.69	0.41
1:C:82:VAL:HG12	1:C:244:ILE:HG23	2.03	0.41
1:D:52:MET:O	1:D:56:ARG:HG3	2.20	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:203:GLY:HA2	2:F:586:HOH:O	2.19	0.41
1:J:126:THR:H	1:J:129:GLN:NE2	2.19	0.41
1:J:91:VAL:HG22	1:J:141:LEU:HB2	2.02	0.41
1:C:224:ARG:HD2	1:C:242:GLU:O	2.21	0.41
1:C:19:PRO:HD3	1:C:351:GLY:HA3	2.02	0.41
1:E:121:TRP:HA	1:E:122:GLY:HA2	1.68	0.41
1:F:149:THR:HA	1:F:321:MET:HE1	2.02	0.41
1:K:297:LEU:HD13	1:K:410:GLU:HG2	2.02	0.41
1:D:86:ARG:HB2	1:D:86:ARG:HE	1.69	0.41
1:F:295:HIS:CE1	1:F:368:GLY:N	2.85	0.41
1:M:121:TRP:CD1	1:M:121:TRP:N	2.87	0.41
1:P:218:GLU:HB3	2:P:523:HOH:O	2.21	0.41
1:S:198:MET:HB3	1:S:204:GLY:HA2	2.03	0.41
1:S:218:GLU:HG3	1:S:219:GLU:N	2.34	0.41
1:E:146:GLN:NE2	1:E:184:LEU:HD13	2.36	0.41
1:H:133:ALA:O	1:H:137:ILE:HD13	2.21	0.41
1:R:348:ILE:HD11	1:R:378:THR:HG22	2.02	0.41
1:A:320:LYS:HE2	1:A:324:VAL:O	2.21	0.41
1:A:149:THR:HA	1:A:321:MET:HE1	2.03	0.41
1:G:341:LEU:O	1:G:345:ASP:HB2	2.21	0.41
1:J:82:VAL:HG12	1:J:244:ILE:HG23	2.02	0.41
1:P:228:GLU:H	1:P:253:MET:HE1	1.85	0.41
1:L:389:TYR:CE2	1:S:331:GLN:HG2	2.55	0.41
1:A:74:ARG:HA	1:A:77:ILE:HD12	2.03	0.41
1:B:74:ARG:HA	1:B:77:ILE:HD12	2.03	0.41
1:E:77:ILE:HG12	1:E:172:TYR:OH	2.21	0.41
1:P:121:TRP:HA	1:P:122:GLY:HA2	1.70	0.41
1:C:329:ILE:HA	1:C:330:PRO:HD3	1.93	0.41
1:C:77:ILE:HG12	1:C:172:TYR:OH	2.21	0.41
1:J:133:ALA:O	1:J:137:ILE:HD13	2.21	0.41
1:M:327:VAL:HG21	1:M:364:ILE:HD12	2.03	0.41
1:G:131:GLU:OE2	1:G:166:ARG:NH2	2.53	0.40
1:G:295:HIS:CE1	1:G:368:GLY:H	2.17	0.40
1:M:176:THR:HG22	1:M:196:ALA:CA	2.49	0.40
1:E:374:ASP:HA	1:G:345:ASP:O	2.21	0.40
1:J:228:GLU:HG2	1:K:105:GLU:HG3	2.03	0.40
1:B:78:GLU:O	1:B:82:VAL:HG23	2.21	0.40
1:L:21:PRO:HB3	1:L:199:GLN:HB2	2.03	0.40
1:M:179:LEU:O	1:M:201:CYS:HB2	2.22	0.40
1:O:224:ARG:HD2	1:O:242:GLU:O	2.21	0.40
1:P:77:ILE:HG12	1:P:172:TYR:OH	2.21	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S:92:LEU:HB2	1:S:137:ILE:HD11	2.02	0.40
1:S:278:GLU:O	1:S:282:LEU:HG	2.22	0.40
1:S:291:GLY:O	1:S:295:HIS:HD2	2.04	0.40
1:D:2:ASP:O	1:D:5:GLN:HG2	2.21	0.40
1:F:176:THR:HG22	1:F:196:ALA:HA	2.02	0.40
1:H:105:GLU:O	1:H:109:ARG:HG2	2.22	0.40
1:J:5:GLN:HE21	1:J:5:GLN:HB3	1.72	0.40
1:K:9:LEU:CD1	1:K:11:PRO:HD3	2.37	0.40
1:R:355:GLY:HA3	1:R:356:PRO:HD2	1.84	0.40
1:A:92:LEU:HB2	1:A:137:ILE:HD11	2.02	0.40
1:C:22:ILE:HD11	2:C:619:HOH:O	2.22	0.40
1:D:199:GLN:HA	1:D:204:GLY:O	2.22	0.40
1:G:133:ALA:O	1:G:137:ILE:HD13	2.21	0.40
1:L:91:VAL:HG22	1:L:141:LEU:HB2	2.03	0.40
1:M:199:GLN:HA	1:M:204:GLY:O	2.21	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	408/411 (99%)	388 (95%)	20 (5%)	0	100	100
1	B	407/411 (99%)	390 (96%)	17 (4%)	0	100	100
1	C	407/411 (99%)	384 (94%)	22 (5%)	1 (0%)	47	69
1	D	407/411 (99%)	392 (96%)	14 (3%)	1 (0%)	47	69
1	E	407/411 (99%)	391 (96%)	15 (4%)	1 (0%)	47	69
1	F	407/411 (99%)	390 (96%)	17 (4%)	0	100	100
1	G	407/411 (99%)	391 (96%)	15 (4%)	1 (0%)	47	69
1	H	407/411 (99%)	395 (97%)	11 (3%)	1 (0%)	47	69

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	J	407/411 (99%)	392 (96%)	15 (4%)	0	100	100
1	K	407/411 (99%)	395 (97%)	12 (3%)	0	100	100
1	L	404/411 (98%)	391 (97%)	13 (3%)	0	100	100
1	M	407/411 (99%)	392 (96%)	14 (3%)	1 (0%)	47	69
1	O	407/411 (99%)	393 (97%)	14 (3%)	0	100	100
1	P	407/411 (99%)	392 (96%)	14 (3%)	1 (0%)	47	69
1	R	407/411 (99%)	395 (97%)	11 (3%)	1 (0%)	47	69
1	S	407/411 (99%)	394 (97%)	12 (3%)	1 (0%)	47	69
All	All	6510/6576 (99%)	6265 (96%)	236 (4%)	9 (0%)	51	73

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H	331	GLN
1	R	391	LYS
1	D	331	GLN
1	G	226	CYS
1	S	246	SER
1	C	331	GLN
1	P	269	ALA
1	E	246	SER
1	M	203	GLY

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	323/336 (96%)	304 (94%)	19 (6%)	19	37
1	B	327/336 (97%)	308 (94%)	19 (6%)	20	38
1	C	324/336 (96%)	305 (94%)	19 (6%)	19	37
1	D	328/336 (98%)	312 (95%)	16 (5%)	25	46

Continued on next page...

*Continued from previous page...*

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	E	321/336 (96%)	300 (94%)	21 (6%)	17	33
1	F	326/336 (97%)	312 (96%)	14 (4%)	29	52
1	G	324/336 (96%)	303 (94%)	21 (6%)	17	33
1	H	329/336 (98%)	310 (94%)	19 (6%)	20	38
1	J	323/336 (96%)	305 (94%)	18 (6%)	21	40
1	K	327/336 (97%)	313 (96%)	14 (4%)	29	52
1	L	323/336 (96%)	297 (92%)	26 (8%)	12	22
1	M	329/336 (98%)	312 (95%)	17 (5%)	23	44
1	O	323/336 (96%)	305 (94%)	18 (6%)	21	40
1	P	327/336 (97%)	308 (94%)	19 (6%)	20	38
1	R	324/336 (96%)	305 (94%)	19 (6%)	19	37
1	S	328/336 (98%)	307 (94%)	21 (6%)	17	34
All	All	5206/5376 (97%)	4906 (94%)	300 (6%)	20	38

All (300) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	GLN
1	A	9	LEU
1	A	22	ILE
1	A	34	SER
1	A	37	ILE
1	A	64	ARG
1	A	86	ARG
1	A	98	ARG
1	A	124	VAL
1	A	137	ILE
1	A	138	ARG
1	A	217	MET
1	A	222	ARG
1	A	324	VAL
1	A	325	LEU
1	A	377	MET
1	A	383	LEU
1	A	390	LEU
1	A	404	TRP
1	B	3	ILE
1	B	5	GLN

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	9	LEU
1	B	37	ILE
1	B	86	ARG
1	B	98	ARG
1	B	124	VAL
1	B	137	ILE
1	B	165	ARG
1	B	168	ASP
1	B	217	MET
1	B	237	ARG
1	B	263	LEU
1	B	325	LEU
1	B	331	GLN
1	B	377	MET
1	B	383	LEU
1	B	404	TRP
1	B	410	GLU
1	C	9	LEU
1	C	22	ILE
1	C	37	ILE
1	C	72	THR
1	C	86	ARG
1	C	91	VAL
1	C	98	ARG
1	C	124	VAL
1	C	130	VAL
1	C	137	ILE
1	C	138	ARG
1	C	176	THR
1	C	217	MET
1	C	218	GLU
1	C	222	ARG
1	C	325	LEU
1	C	377	MET
1	C	383	LEU
1	C	404	TRP
1	D	9	LEU
1	D	37	ILE
1	D	86	ARG
1	D	98	ARG
1	D	124	VAL
1	D	137	ILE

*Continued on next page...*



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	D	138	ARG
1	D	176	THR
1	D	217	MET
1	D	218	GLU
1	D	237	ARG
1	D	263	LEU
1	D	325	LEU
1	D	377	MET
1	D	383	LEU
1	D	404	TRP
1	E	9	LEU
1	E	22	ILE
1	E	37	ILE
1	E	86	ARG
1	E	91	VAL
1	E	98	ARG
1	E	124	VAL
1	E	137	ILE
1	E	138	ARG
1	E	154	LEU
1	E	176	THR
1	E	217	MET
1	E	218	GLU
1	E	224	ARG
1	E	237	ARG
1	E	273	LEU
1	E	325	LEU
1	E	377	MET
1	E	383	LEU
1	E	390	LEU
1	E	404	TRP
1	F	9	LEU
1	F	37	ILE
1	F	86	ARG
1	F	91	VAL
1	F	98	ARG
1	F	124	VAL
1	F	137	ILE
1	F	157	LEU
1	F	176	THR
1	F	237	ARG
1	F	325	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	F	377	MET
1	F	383	LEU
1	F	404	TRP
1	G	9	LEU
1	G	22	ILE
1	G	37	ILE
1	G	86	ARG
1	G	91	VAL
1	G	98	ARG
1	G	124	VAL
1	G	137	ILE
1	G	138	ARG
1	G	176	THR
1	G	218	GLU
1	G	240	ASP
1	G	273	LEU
1	G	312	GLU
1	G	325	LEU
1	G	345	ASP
1	G	377	MET
1	G	383	LEU
1	G	390	LEU
1	G	391	LYS
1	G	404	TRP
1	H	4	THR
1	H	9	LEU
1	H	22	ILE
1	H	37	ILE
1	H	86	ARG
1	H	98	ARG
1	H	124	VAL
1	H	137	ILE
1	H	138	ARG
1	H	176	THR
1	H	217	MET
1	H	218	GLU
1	H	219	GLU
1	H	237	ARG
1	H	325	LEU
1	H	377	MET
1	H	383	LEU
1	H	390	LEU

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	H	404	TRP
1	J	5	GLN
1	J	9	LEU
1	J	22	ILE
1	J	37	ILE
1	J	86	ARG
1	J	98	ARG
1	J	124	VAL
1	J	137	ILE
1	J	138	ARG
1	J	162	GLU
1	J	217	MET
1	J	218	GLU
1	J	222	ARG
1	J	324	VAL
1	J	325	LEU
1	J	377	MET
1	J	383	LEU
1	J	404	TRP
1	K	9	LEU
1	K	37	ILE
1	K	86	ARG
1	K	91	VAL
1	K	98	ARG
1	K	124	VAL
1	K	137	ILE
1	K	165	ARG
1	K	217	MET
1	K	222	ARG
1	K	324	VAL
1	K	325	LEU
1	K	383	LEU
1	K	404	TRP
1	L	9	LEU
1	L	22	ILE
1	L	27	ARG
1	L	37	ILE
1	L	60	ARG
1	L	74	ARG
1	L	82	VAL
1	L	86	ARG
1	L	91	VAL

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	L	98	ARG
1	L	124	VAL
1	L	137	ILE
1	L	154	LEU
1	L	157	LEU
1	L	176	THR
1	L	217	MET
1	L	222	ARG
1	L	234	ASP
1	L	237	ARG
1	L	263	LEU
1	L	324	VAL
1	L	325	LEU
1	L	377	MET
1	L	383	LEU
1	L	390	LEU
1	L	404	TRP
1	M	4	THR
1	M	7	SER
1	M	9	LEU
1	M	37	ILE
1	M	86	ARG
1	M	98	ARG
1	M	124	VAL
1	M	126	THR
1	M	137	ILE
1	M	138	ARG
1	M	217	MET
1	M	218	GLU
1	M	325	LEU
1	M	377	MET
1	M	383	LEU
1	M	390	LEU
1	M	404	TRP
1	O	9	LEU
1	O	22	ILE
1	O	34	SER
1	O	37	ILE
1	O	86	ARG
1	O	91	VAL
1	O	98	ARG
1	O	124	VAL

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	O	137	ILE
1	O	138	ARG
1	O	157	LEU
1	O	218	GLU
1	O	324	VAL
1	O	325	LEU
1	O	377	MET
1	O	383	LEU
1	O	390	LEU
1	O	404	TRP
1	P	9	LEU
1	P	22	ILE
1	P	37	ILE
1	P	86	ARG
1	P	91	VAL
1	P	98	ARG
1	P	108	ARG
1	P	124	VAL
1	P	137	ILE
1	P	138	ARG
1	P	165	ARG
1	P	217	MET
1	P	237	ARG
1	P	325	LEU
1	P	377	MET
1	P	383	LEU
1	P	390	LEU
1	P	391	LYS
1	P	404	TRP
1	R	9	LEU
1	R	22	ILE
1	R	37	ILE
1	R	60	ARG
1	R	74	ARG
1	R	86	ARG
1	R	98	ARG
1	R	124	VAL
1	R	130	VAL
1	R	137	ILE
1	R	138	ARG
1	R	165	ARG
1	R	217	MET

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	R	222	ARG
1	R	325	LEU
1	R	377	MET
1	R	383	LEU
1	R	390	LEU
1	R	404	TRP
1	S	9	LEU
1	S	22	ILE
1	S	37	ILE
1	S	86	ARG
1	S	98	ARG
1	S	124	VAL
1	S	137	ILE
1	S	138	ARG
1	S	162	GLU
1	S	217	MET
1	S	218	GLU
1	S	222	ARG
1	S	237	ARG
1	S	263	LEU
1	S	325	LEU
1	S	336	ASP
1	S	377	MET
1	S	383	LEU
1	S	390	LEU
1	S	391	LYS
1	S	404	TRP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (131) such sidechains are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	10	ASN
1	A	49	ASN
1	A	129	GLN
1	A	146	GLN
1	A	295	HIS
1	A	406	HIS
1	B	10	ASN
1	B	49	ASN
1	B	129	GLN
1	B	146	GLN
1	B	285	GLN

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	295	HIS
1	B	331	GLN
1	C	8	GLN
1	C	10	ASN
1	C	39	GLN
1	C	49	ASN
1	C	129	GLN
1	C	146	GLN
1	C	295	HIS
1	C	406	HIS
1	D	5	GLN
1	D	10	ASN
1	D	39	GLN
1	D	49	ASN
1	D	129	GLN
1	D	146	GLN
1	D	295	HIS
1	D	406	HIS
1	E	5	GLN
1	E	10	ASN
1	E	49	ASN
1	E	101	HIS
1	E	129	GLN
1	E	146	GLN
1	E	295	HIS
1	E	406	HIS
1	F	10	ASN
1	F	49	ASN
1	F	129	GLN
1	F	146	GLN
1	F	295	HIS
1	F	388	ASN
1	G	5	GLN
1	G	8	GLN
1	G	10	ASN
1	G	39	GLN
1	G	46	HIS
1	G	49	ASN
1	G	129	GLN
1	G	146	GLN
1	G	295	HIS
1	G	406	HIS

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	H	5	GLN
1	H	10	ASN
1	H	39	GLN
1	H	49	ASN
1	H	129	GLN
1	H	146	GLN
1	H	295	HIS
1	H	406	HIS
1	J	5	GLN
1	J	10	ASN
1	J	39	GLN
1	J	49	ASN
1	J	129	GLN
1	J	146	GLN
1	J	295	HIS
1	J	401	GLN
1	J	406	HIS
1	K	5	GLN
1	K	8	GLN
1	K	10	ASN
1	K	39	GLN
1	K	49	ASN
1	K	129	GLN
1	K	146	GLN
1	K	295	HIS
1	K	331	GLN
1	K	406	HIS
1	L	5	GLN
1	L	10	ASN
1	L	39	GLN
1	L	49	ASN
1	L	129	GLN
1	L	146	GLN
1	L	295	HIS
1	L	319	HIS
1	L	388	ASN
1	M	5	GLN
1	M	10	ASN
1	M	39	GLN
1	M	49	ASN
1	M	129	GLN
1	M	146	GLN

*Continued on next page...*



*Continued from previous page...*

Mol	Chain	Res	Type
1	M	295	HIS
1	M	388	ASN
1	M	406	HIS
1	O	5	GLN
1	O	10	ASN
1	O	39	GLN
1	O	49	ASN
1	O	129	GLN
1	O	146	GLN
1	O	295	HIS
1	O	388	ASN
1	O	406	HIS
1	P	5	GLN
1	P	10	ASN
1	P	39	GLN
1	P	49	ASN
1	P	129	GLN
1	P	146	GLN
1	P	295	HIS
1	P	406	HIS
1	R	5	GLN
1	R	10	ASN
1	R	39	GLN
1	R	49	ASN
1	R	129	GLN
1	R	146	GLN
1	R	295	HIS
1	S	5	GLN
1	S	10	ASN
1	S	39	GLN
1	S	49	ASN
1	S	129	GLN
1	S	146	GLN
1	S	295	HIS
1	S	331	GLN
1	S	406	HIS

### 5.3.3 RNA

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains

16 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
1	LLP	R	200	1	23,24,25	1.63	2 (8%)	25,32,34	1.54	5 (20%)
1	LLP	S	200	1	23,24,25	1.64	2 (8%)	25,32,34	1.65	5 (20%)
1	LLP	E	200	1	23,24,25	1.61	2 (8%)	25,32,34	1.70	5 (20%)
1	LLP	F	200	1	23,24,25	1.62	2 (8%)	25,32,34	1.52	5 (20%)
1	LLP	G	200	1	23,24,25	1.63	2 (8%)	25,32,34	1.59	5 (20%)
1	LLP	H	200	1	23,24,25	1.62	2 (8%)	25,32,34	1.64	5 (20%)
1	LLP	A	200	1	23,24,25	1.64	2 (8%)	25,32,34	1.43	4 (16%)
1	LLP	B	200	1	23,24,25	1.61	2 (8%)	25,32,34	1.74	6 (24%)
1	LLP	C	200	1	23,24,25	1.64	2 (8%)	25,32,34	1.59	6 (24%)
1	LLP	D	200	1	23,24,25	1.64	2 (8%)	25,32,34	1.54	4 (16%)
1	LLP	M	200	1	23,24,25	1.63	2 (8%)	25,32,34	1.73	5 (20%)
1	LLP	O	200	1	23,24,25	1.61	2 (8%)	25,32,34	1.67	5 (20%)
1	LLP	P	200	1	23,24,25	1.62	2 (8%)	25,32,34	1.68	5 (20%)
1	LLP	J	200	1	23,24,25	1.64	2 (8%)	25,32,34	1.47	5 (20%)
1	LLP	K	200	1	23,24,25	1.63	2 (8%)	25,32,34	1.68	4 (16%)
1	LLP	L	200	1	23,24,25	1.63	2 (8%)	25,32,34	1.46	4 (16%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	LLP	R	200	1	-	7/16/17/19	0/1/1/1
1	LLP	S	200	1	-	7/16/17/19	0/1/1/1
1	LLP	E	200	1	-	5/16/17/19	0/1/1/1
1	LLP	F	200	1	-	7/16/17/19	0/1/1/1

*Continued on next page...*

*Continued from previous page...*

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	LLP	G	200	1	-	7/16/17/19	0/1/1/1
1	LLP	H	200	1	-	5/16/17/19	0/1/1/1
1	LLP	A	200	1	-	7/16/17/19	0/1/1/1
1	LLP	B	200	1	-	8/16/17/19	0/1/1/1
1	LLP	C	200	1	-	10/16/17/19	0/1/1/1
1	LLP	D	200	1	-	5/16/17/19	0/1/1/1
1	LLP	M	200	1	-	6/16/17/19	0/1/1/1
1	LLP	O	200	1	-	4/16/17/19	0/1/1/1
1	LLP	P	200	1	-	3/16/17/19	0/1/1/1
1	LLP	J	200	1	-	6/16/17/19	0/1/1/1
1	LLP	K	200	1	-	4/16/17/19	0/1/1/1
1	LLP	L	200	1	-	5/16/17/19	0/1/1/1

All (32) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	200	LLP	C4'-NZ	6.46	1.49	1.27
1	F	200	LLP	C4'-NZ	6.45	1.48	1.27
1	S	200	LLP	C4'-NZ	6.45	1.48	1.27
1	J	200	LLP	C4'-NZ	6.45	1.48	1.27
1	K	200	LLP	C4'-NZ	6.44	1.48	1.27
1	D	200	LLP	C4'-NZ	6.44	1.48	1.27
1	A	200	LLP	C4'-NZ	6.42	1.48	1.27
1	L	200	LLP	C4'-NZ	6.41	1.48	1.27
1	H	200	LLP	C4'-NZ	6.39	1.48	1.27
1	M	200	LLP	C4'-NZ	6.38	1.48	1.27
1	P	200	LLP	C4'-NZ	6.37	1.48	1.27
1	C	200	LLP	C4'-NZ	6.37	1.48	1.27
1	R	200	LLP	C4'-NZ	6.36	1.48	1.27
1	B	200	LLP	C4'-NZ	6.36	1.48	1.27
1	O	200	LLP	C4'-NZ	6.35	1.48	1.27
1	E	200	LLP	C4'-NZ	6.33	1.48	1.27
1	G	200	LLP	C4-C4'	2.48	1.51	1.46
1	A	200	LLP	C4-C4'	2.48	1.51	1.46
1	S	200	LLP	C4-C4'	2.40	1.51	1.46
1	F	200	LLP	C4-C4'	2.36	1.51	1.46
1	L	200	LLP	C4-C4'	2.36	1.51	1.46
1	H	200	LLP	C4-C4'	2.34	1.51	1.46
1	P	200	LLP	C4-C4'	2.31	1.51	1.46
1	K	200	LLP	C4-C4'	2.31	1.51	1.46

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	200	LLP	C4-C4'	2.31	1.51	1.46
1	R	200	LLP	C4-C4'	2.30	1.51	1.46
1	D	200	LLP	C4-C4'	2.29	1.51	1.46
1	E	200	LLP	C4-C4'	2.28	1.51	1.46
1	J	200	LLP	C4-C4'	2.25	1.50	1.46
1	M	200	LLP	C4-C4'	2.23	1.50	1.46
1	O	200	LLP	C4-C4'	2.17	1.50	1.46
1	B	200	LLP	C4-C4'	2.14	1.50	1.46

All (78) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	200	LLP	OP4-C5'-C5	5.53	119.90	109.35
1	K	200	LLP	OP4-C5'-C5	5.39	119.62	109.35
1	E	200	LLP	OP4-C5'-C5	5.30	119.44	109.35
1	M	200	LLP	OP4-C5'-C5	5.10	119.07	109.35
1	P	200	LLP	OP4-C5'-C5	5.05	118.98	109.35
1	H	200	LLP	OP4-C5'-C5	4.84	118.58	109.35
1	S	200	LLP	OP4-C5'-C5	4.82	118.54	109.35
1	O	200	LLP	OP4-C5'-C5	4.71	118.32	109.35
1	G	200	LLP	OP4-C5'-C5	4.69	118.29	109.35
1	D	200	LLP	OP4-C5'-C5	4.57	118.05	109.35
1	C	200	LLP	OP4-C5'-C5	4.46	117.85	109.35
1	R	200	LLP	OP4-C5'-C5	4.29	117.52	109.35
1	L	200	LLP	OP4-C5'-C5	4.07	117.10	109.35
1	F	200	LLP	OP4-C5'-C5	3.96	116.89	109.35
1	J	200	LLP	OP4-C5'-C5	3.59	116.20	109.35
1	A	200	LLP	OP4-C5'-C5	3.33	115.69	109.35
1	H	200	LLP	CE-NZ-C4'	-3.31	108.74	118.90
1	O	200	LLP	CE-NZ-C4'	-3.25	108.91	118.90
1	F	200	LLP	CE-NZ-C4'	-3.22	109.02	118.90
1	S	200	LLP	CE-NZ-C4'	-3.17	109.17	118.90
1	P	200	LLP	CE-NZ-C4'	-3.12	109.31	118.90
1	E	200	LLP	CE-NZ-C4'	-3.11	109.36	118.90
1	C	200	LLP	CE-NZ-C4'	-3.07	109.47	118.90
1	J	200	LLP	CE-NZ-C4'	-3.06	109.50	118.90
1	R	200	LLP	CE-NZ-C4'	-3.06	109.51	118.90
1	D	200	LLP	CE-NZ-C4'	-3.05	109.55	118.90
1	A	200	LLP	CE-NZ-C4'	-3.02	109.63	118.90
1	M	200	LLP	CD-CE-NZ	3.01	118.31	110.93
1	K	200	LLP	CE-NZ-C4'	-3.00	109.68	118.90
1	M	200	LLP	CE-NZ-C4'	-2.98	109.74	118.90

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	200	LLP	CE-NZ-C4'	-2.96	109.82	118.90
1	L	200	LLP	CE-NZ-C4'	-2.80	110.29	118.90
1	S	200	LLP	CD-CE-NZ	2.75	117.67	110.93
1	O	200	LLP	CD-CE-NZ	2.75	117.66	110.93
1	K	200	LLP	CD-CE-NZ	2.71	117.56	110.93
1	M	200	LLP	C5-C6-N1	-2.67	119.37	123.82
1	B	200	LLP	C5-C6-N1	-2.64	119.42	123.82
1	F	200	LLP	CD-CE-NZ	2.61	117.33	110.93
1	A	200	LLP	CD-CE-NZ	2.60	117.31	110.93
1	J	200	LLP	CD-CE-NZ	2.60	117.29	110.93
1	P	200	LLP	C5-C6-N1	-2.59	119.50	123.82
1	O	200	LLP	C4-C3-C2	-2.59	118.58	120.19
1	E	200	LLP	C5-C6-N1	-2.57	119.54	123.82
1	H	200	LLP	C5-C6-N1	-2.56	119.55	123.82
1	P	200	LLP	CD-CE-NZ	2.55	117.19	110.93
1	C	200	LLP	C5-C6-N1	-2.55	119.57	123.82
1	E	200	LLP	C4-C3-C2	-2.55	118.61	120.19
1	G	200	LLP	CD-CE-NZ	2.54	117.16	110.93
1	M	200	LLP	C4-C3-C2	-2.52	118.63	120.19
1	B	200	LLP	CE-NZ-C4'	-2.52	111.17	118.90
1	O	200	LLP	C5-C6-N1	-2.51	119.64	123.82
1	K	200	LLP	C5-C6-N1	-2.48	119.68	123.82
1	S	200	LLP	C4-C3-C2	-2.44	118.68	120.19
1	J	200	LLP	C5-C6-N1	-2.44	119.75	123.82
1	S	200	LLP	C5-C6-N1	-2.43	119.77	123.82
1	R	200	LLP	C5-C6-N1	-2.42	119.79	123.82
1	D	200	LLP	CD-CE-NZ	2.42	116.86	110.93
1	H	200	LLP	C4-C3-C2	-2.41	118.70	120.19
1	G	200	LLP	C5-C6-N1	-2.40	119.82	123.82
1	P	200	LLP	C4-C3-C2	-2.39	118.71	120.19
1	F	200	LLP	C5-C6-N1	-2.38	119.85	123.82
1	R	200	LLP	CD-CE-NZ	2.38	116.75	110.93
1	H	200	LLP	CD-CE-NZ	2.37	116.74	110.93
1	L	200	LLP	C5-C6-N1	-2.36	119.88	123.82
1	B	200	LLP	CD-CE-NZ	2.36	116.71	110.93
1	B	200	LLP	C4-C3-C2	-2.32	118.75	120.19
1	B	200	LLP	C4-C4'-NZ	-2.31	113.69	124.31
1	D	200	LLP	C5-C6-N1	-2.31	119.97	123.82
1	L	200	LLP	CD-CE-NZ	2.27	116.49	110.93
1	A	200	LLP	C5-C6-N1	-2.25	120.06	123.82
1	E	200	LLP	CD-CE-NZ	2.22	116.38	110.93
1	C	200	LLP	CD-CE-NZ	2.21	116.36	110.93

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	200	LLP	C4-C3-C2	-2.17	118.84	120.19
1	G	200	LLP	C4-C3-C2	-2.13	118.87	120.19
1	R	200	LLP	C4-C3-C2	-2.13	118.87	120.19
1	J	200	LLP	C4-C3-C2	-2.12	118.87	120.19
1	C	200	LLP	OP3-P-OP4	2.12	112.37	106.73
1	C	200	LLP	C4-C3-C2	-2.02	118.94	120.19

There are no chirality outliers.

All (96) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	R	200	LLP	C4-C4'-NZ-CE
1	R	200	LLP	N-CA-CB-CG
1	R	200	LLP	C-CA-CB-CG
1	R	200	LLP	CG-CD-CE-NZ
1	S	200	LLP	C4-C4'-NZ-CE
1	S	200	LLP	C-CA-CB-CG
1	S	200	LLP	CG-CD-CE-NZ
1	E	200	LLP	C4-C4'-NZ-CE
1	E	200	LLP	C-CA-CB-CG
1	F	200	LLP	C4-C4'-NZ-CE
1	F	200	LLP	C-CA-CB-CG
1	F	200	LLP	CG-CD-CE-NZ
1	G	200	LLP	C4-C4'-NZ-CE
1	G	200	LLP	C5'-OP4-P-OP1
1	G	200	LLP	C5'-OP4-P-OP2
1	G	200	LLP	C-CA-CB-CG
1	H	200	LLP	C4-C4'-NZ-CE
1	H	200	LLP	O-C-CA-CB
1	A	200	LLP	C4-C4'-NZ-CE
1	A	200	LLP	C5'-OP4-P-OP2
1	A	200	LLP	C-CA-CB-CG
1	B	200	LLP	C-CA-CB-CG
1	C	200	LLP	C4-C4'-NZ-CE
1	C	200	LLP	C5'-OP4-P-OP2
1	C	200	LLP	C5'-OP4-P-OP3
1	C	200	LLP	C-CA-CB-CG
1	C	200	LLP	O-C-CA-CB
1	D	200	LLP	C4-C4'-NZ-CE
1	D	200	LLP	O-C-CA-CB
1	M	200	LLP	C4-C4'-NZ-CE
1	M	200	LLP	O-C-CA-CB

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
1	O	200	LLP	C3-C4-C4'-NZ
1	O	200	LLP	C4-C4'-NZ-CE
1	P	200	LLP	C4-C4'-NZ-CE
1	P	200	LLP	C-CA-CB-CG
1	J	200	LLP	C3-C4-C4'-NZ
1	J	200	LLP	C4-C4'-NZ-CE
1	J	200	LLP	O-C-CA-CB
1	K	200	LLP	C4-C4'-NZ-CE
1	K	200	LLP	C-CA-CB-CG
1	L	200	LLP	C4-C4'-NZ-CE
1	L	200	LLP	C-CA-CB-CG
1	H	200	LLP	CG-CD-CE-NZ
1	R	200	LLP	C3-C4-C4'-NZ
1	E	200	LLP	C3-C4-C4'-NZ
1	A	200	LLP	C3-C4-C4'-NZ
1	M	200	LLP	C3-C4-C4'-NZ
1	L	200	LLP	C3-C4-C4'-NZ
1	F	200	LLP	CA-CB-CG-CD
1	B	200	LLP	CA-CB-CG-CD
1	B	200	LLP	CG-CD-CE-NZ
1	M	200	LLP	CA-CB-CG-CD
1	S	200	LLP	CE-CD-CG-CB
1	A	200	LLP	CA-CB-CG-CD
1	G	200	LLP	C3-C4-C4'-NZ
1	C	200	LLP	C3-C4-C4'-NZ
1	L	200	LLP	CA-CB-CG-CD
1	R	200	LLP	CE-CD-CG-CB
1	K	200	LLP	CA-CB-CG-CD
1	C	200	LLP	C5'-OP4-P-OP1
1	F	200	LLP	CE-CD-CG-CB
1	B	200	LLP	C3-C4-C4'-NZ
1	M	200	LLP	CE-CD-CG-CB
1	G	200	LLP	C5-C4-C4'-NZ
1	A	200	LLP	C5-C4-C4'-NZ
1	C	200	LLP	C5-C4-C4'-NZ
1	M	200	LLP	C5-C4-C4'-NZ
1	L	200	LLP	C5-C4-C4'-NZ
1	D	200	LLP	CA-CB-CG-CD
1	B	200	LLP	CD-CE-NZ-C4'
1	R	200	LLP	CD-CE-NZ-C4'
1	C	200	LLP	CD-CE-NZ-C4'
1	O	200	LLP	CD-CE-NZ-C4'

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
1	D	200	LLP	CD-CE-NZ-C4'
1	S	200	LLP	C3-C4-C4'-NZ
1	D	200	LLP	C3-C4-C4'-NZ
1	P	200	LLP	C3-C4-C4'-NZ
1	B	200	LLP	C5-C4-C4'-NZ
1	J	200	LLP	CD-CE-NZ-C4'
1	B	200	LLP	CE-CD-CG-CB
1	F	200	LLP	C3-C4-C4'-NZ
1	K	200	LLP	C3-C4-C4'-NZ
1	A	200	LLP	CD-CE-NZ-C4'
1	J	200	LLP	CA-CB-CG-CD
1	S	200	LLP	CD-CE-NZ-C4'
1	C	200	LLP	CE-CD-CG-CB
1	J	200	LLP	CE-CD-CG-CB
1	G	200	LLP	C5'-OP4-P-OP3
1	H	200	LLP	CA-CB-CG-CD
1	O	200	LLP	CE-CD-CG-CB
1	E	200	LLP	C5-C4-C4'-NZ
1	H	200	LLP	C3-C4-C4'-NZ
1	E	200	LLP	CD-CE-NZ-C4'
1	S	200	LLP	N-CA-CB-CG
1	F	200	LLP	N-CA-CB-CG
1	B	200	LLP	N-CA-CB-CG

There are no ring outliers.

9 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	R	200	LLP	1	0
1	S	200	LLP	1	0
1	E	200	LLP	1	0
1	G	200	LLP	2	0
1	C	200	LLP	3	0
1	D	200	LLP	2	0
1	P	200	LLP	1	0
1	J	200	LLP	1	0
1	L	200	LLP	2	0

## 5.5 Carbohydrates

There are no carbohydrates in this entry.



## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	410/411 (99%)	-0.08	1 (0%) 95 95	26, 36, 45, 53	0
1	B	409/411 (99%)	-0.11	4 (0%) 82 81	27, 33, 43, 57	0
1	C	409/411 (99%)	-0.08	4 (0%) 82 81	26, 34, 47, 57	0
1	D	409/411 (99%)	-0.17	2 (0%) 91 90	26, 33, 42, 46	0
1	E	409/411 (99%)	-0.09	2 (0%) 91 90	25, 35, 44, 48	0
1	F	409/411 (99%)	-0.14	0 100 100	26, 32, 43, 56	0
1	G	409/411 (99%)	-0.05	5 (1%) 79 77	26, 34, 45, 58	0
1	H	409/411 (99%)	-0.13	2 (0%) 91 90	25, 32, 41, 47	0
1	J	409/411 (99%)	-0.17	2 (0%) 91 90	25, 31, 41, 46	0
1	K	409/411 (99%)	-0.07	1 (0%) 95 95	25, 31, 44, 55	0
1	L	408/411 (99%)	-0.03	8 (1%) 65 62	25, 32, 43, 61	0
1	M	409/411 (99%)	-0.13	0 100 100	25, 33, 42, 46	0
1	O	409/411 (99%)	-0.12	1 (0%) 95 95	24, 31, 41, 46	0
1	P	409/411 (99%)	-0.13	1 (0%) 95 95	25, 32, 44, 55	0
1	R	409/411 (99%)	-0.03	10 (2%) 59 55	27, 32, 43, 61	0
1	S	409/411 (99%)	-0.13	1 (0%) 95 95	27, 33, 43, 46	0
All	All	6544/6576 (99%)	-0.10	44 (0%) 87 86	24, 33, 44, 61	0

All (44) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	R	234	ASP	5.2
1	R	236	HIS	5.1
1	L	235	ALA	5.0
1	L	234	ASP	4.7
1	R	233	THR	4.2

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	R	237	ARG	4.2
1	L	233	THR	4.0
1	R	232	ARG	3.7
1	L	232	ARG	3.5
1	B	237	ARG	3.4
1	G	231	ILE	3.4
1	R	228	GLU	2.9
1	L	229	GLU	2.9
1	L	236	HIS	2.9
1	S	130	VAL	2.8
1	J	354	PHE	2.7
1	L	227	VAL	2.6
1	O	137	ILE	2.6
1	C	233	THR	2.5
1	C	228	GLU	2.5
1	E	354	PHE	2.4
1	H	290	TYR	2.4
1	A	354	PHE	2.3
1	K	234	ASP	2.3
1	G	228	GLU	2.3
1	P	235	ALA	2.3
1	G	234	ASP	2.3
1	C	234	ASP	2.3
1	B	360	LYS	2.2
1	B	235	ALA	2.2
1	R	229	GLU	2.2
1	G	263	LEU	2.2
1	E	359	GLY	2.2
1	B	290	TYR	2.2
1	R	231	ILE	2.2
1	J	290	TYR	2.1
1	D	137	ILE	2.1
1	D	354	PHE	2.1
1	C	290	TYR	2.1
1	R	235	ALA	2.0
1	H	137	ILE	2.0
1	L	239	GLY	2.0
1	G	237	ARG	2.0
1	R	227	VAL	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
1	LLP	A	200	24/25	0.95	0.15	32,33,35,35	0
1	LLP	M	200	24/25	0.95	0.15	30,33,34,35	0
1	LLP	E	200	24/25	0.96	0.15	31,32,33,33	0
1	LLP	H	200	24/25	0.97	0.16	28,31,32,33	0
1	LLP	S	200	24/25	0.97	0.13	31,32,33,33	0
1	LLP	B	200	24/25	0.97	0.14	29,30,32,32	0
1	LLP	C	200	24/25	0.97	0.15	32,33,33,34	0
1	LLP	D	200	24/25	0.97	0.13	29,30,30,31	0
1	LLP	R	200	24/25	0.97	0.14	29,31,31,32	0
1	LLP	O	200	24/25	0.97	0.15	28,30,31,31	0
1	LLP	J	200	24/25	0.97	0.16	28,30,30,30	0
1	LLP	K	200	24/25	0.97	0.15	29,31,31,32	0
1	LLP	L	200	24/25	0.97	0.16	28,29,30,30	0
1	LLP	P	200	24/25	0.98	0.15	30,32,32,32	0
1	LLP	G	200	24/25	0.98	0.14	30,31,31,31	0
1	LLP	F	200	24/25	0.99	0.13	28,30,30,31	0

## 6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 6.4 Ligands [i](#)

There are no ligands in this entry.

## 6.5 Other polymers [i](#)

There are no such residues in this entry.